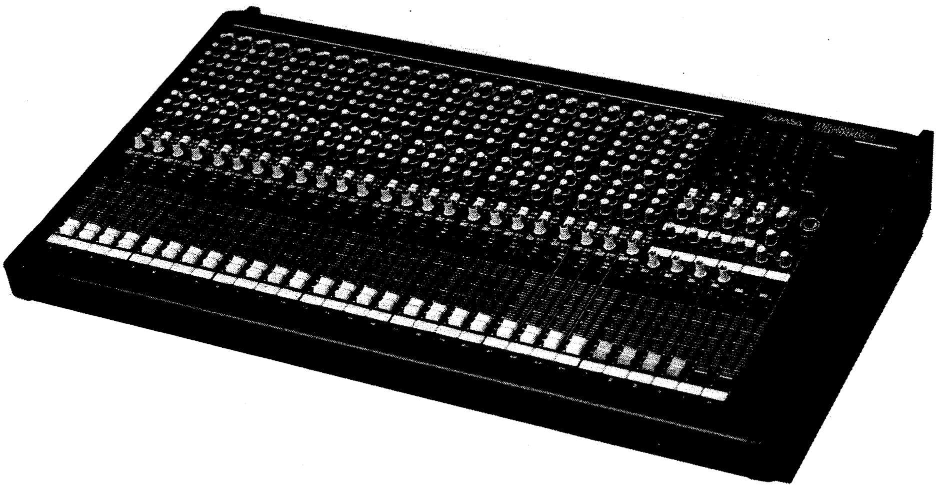
Service Manual

Sound Reinforcement & Recording Consoles

WR-S4412/WR-S4416/WR-S4424



TECHNICAL SPECIFICATIONS

	Standard	Measurement Condition
Frequency Response	+1/−2.5dB at 20Hz~20kHz	Input "A" to Group Out, +4dB IN, +4dB OUT, RL=600Ω, Norminal Setting
T. H. D.	< 0.1% at 20Hz to 20kHz	Input "A" to Group Out, +4dB IN, +4dB OUT, RL=600Ω, Norminal Setting
Equivalent Input Noise	< −126dB at 150Ω Input Source Impedance	Audio Band Pass Filter W. T. D. Mono IN "A" to Group Out
Maximum Voltage Gain	94 +2/−2dB at 1kHz	Mono input "A" to Group to Master Out RL=10kΩ
Crosstalk	< −70dB at 1kHz Adjacent Input Channels & CH SW & Fader	Input "A" to Group Out, +4dB IN, +4dB OUT, RL=10kΩ, Norminal Setting
C. M. R. R.	< −80dB at 1kHz	Input "A" to Group Out, Trim at "−60dB"
Mono Input Equalizer Low Mid. High	Fixed shelving type: 70Hz, ±15 ±3dB Sweepable peaking type: 200Hz to 6.3kHz, ±15 ±3dB Fixed shelving type: 12.5kHz, ±15 ±3dB (High/Low by Frequency Regulation of Shelving ±12 ±2.5dB)	Input "A" to Group Out, +4dB IN, +4dB OUT, RL=10kΩ, Norminal Setting Each EQ gain "PEAK" or "DIP"

Panasonic

Maximum Input Level	Input A +22dB +3/−0dB Input B +28dB +3/−0dB	Trim at CCW
Maximum Output Level	+24dB +2/−0dB (Group/Master Out Balanced) at 1kHz +20dB +2/−0dB (Aux/Monitor Out Unbalanced) at 1kHz	Input "A", OUT FADER "MAX", +4dB in +14dB out Setting RL=600Ω (GROUP, MASTER, AUX), RL=10kΩ (MONITOR)
Residual Output Noise	< −90dB by Group, Aux, Master, Monitor Output	Output Faders & Level Control at "KILL", RL=600Ω (EX, 10kΩ : Monitor) Audio Band Pass Filter W. T. D.
Fader	100mm Stroke High Precision Cabon Fader	
Meter	VU Response 12 Segment 3 Coler LED Bar-graph Meter	
Power Supply	WR-S4412/B, WR-S4416/B, WR-S4424/B: 240V AC, 50/60Hz WR-S4412/G, WR-S4416/G, WR-S4424/G: 230V AC, 50/60Hz	
Power Consumption		
WR-S4412	55W	
WR-S4416	60W	
WR-S4424	70W	
Dimensions (W × H × D)		
WR-S4412	12ch 650mm × 171mm × 584mm	
WR-S4416	16ch 766mm × 171mm × 584mm	
WR-S4424	24ch 998mm × 171mm × 584mm	
Net Weight		
WR-S4412	12ch 18.5kg	
WR-S4416	16ch 21.0kg	
WR-S4424	24ch 27.5kg	

* 0dB=0.775 vrms

INPUT SPECIFICATION

Input Characteristics	Indicated Impedance	Nominal Source Impedance	Nominal Load Impedance	Nominal Level	Maximum Level	Connector
Mono Input A	5kΩ	150 - 600		−60 - +4dB	−38 - +22dB	Electronically-Balanced XLR
Mono Input B	10kΩ	150 - 600		−54 - +10dB	−32 - +28dB	Same above, T/R/S phone
Input/Output Insertion Return	10k	600		−2dB	+20	Unbalanced, T/R/S phone
Sub Input	10k	600		+4	+26	Unbalanced, T/R/S or T/S phone
Aux Return	10k	600		+4	+26	Unbalanced, T/R/S phone
Talk Back	5k	150 - 600		−50 - −20	−28 - +2	Unbalanced, XLR

OUTPUT SPECIFICATIONS

Output Characteristics	Indicated Impedance	Nominal Source Impedance	Nominal Load Impedance	Nominal Level	Maximum Level	Connector
Group, Master Output	600		600	+4	+24	Electronically-Balanced, XLR
Aux Output	600		600	+4	+20	Unbalanced, T/R/S or T/S phone
Input/Output Insertion Send	10k		10k	−2	+20	Unbalanced, T/R/S phone
Direct Output	10k		10k	−2	+20	Unbalanced, T/R/S or T/S phone
Monitor Output	10k		10k	+4	+20	Same above
Rec Output	10k		10k	−10	+12	Unbalanced, RCA pin
Headphone Output	400		400	—	160mW	Unbalanced, T/R/S phone

PRECAUTIONS

Read the following section carefully to insure safe and proper use of the mixer.

NEVER INSERT OR REMOVE MODULES FROM THE CHASSIS WHEN THE POWER IS TURNED ON. BE SURE TO TURN THE POWER OFF OR DAMAGE TO THE MIXER WILL RESULT.

1. A 48 volt potential exists between pins 2 and 1 and between pins 3 and 1 of the input XLR connectors when phantom power is turned on.

2. Turn on the phantom power switch only after a connector has been inserted into that channel in order to prevent shocks and avoid damaging clicking and popping sounds. When disconnecting phantom microphones, wait at least 20 sec. after turning phantom power off.
   When disconnecting the microphone, set the channel on switches to OFF position and faders to "- ∞".

3. Be especially careful to keep the phantom switch turned off when using an unbalanced type microphone or when any other type equipment is connected the input connectors. Failure to do so may result in damage, smoke, or fire.

4. When using the input selector switch while the phantom power is turned on, turn the output fader down to avoid any popping noise which might damage the speakers or other equipment connected to the mixer.

5. The phantom power supply employs a slow start system to avoid click sounds from being produced. Allow 1 minute after pressing phantom power switch for voltage to stabilize.

6. Set all faders to minimum and channel switches off when turning the power on and off.

7. Avoid using the mixer near anything that generates electric fields, such as transformers, lighting, transmitters, CRT monitor etc.

CONTENTS

SPECIFICATION 1, 2
PRECAUTIONS 2
MAJOR OPERATING CONTROL .... 3 - 6
IN/OUT CABLE INFORMATIONS 7
OPERATION CHECK .... 8 - 18
DISASSEMBLY 19, 20
ADJUSTMENT 21
APPEARANCE OF IC TRANSISTOR AND DIODE 22
LEVEL DIAGRAM 23
BLOCK DIAGRAM 24

SCHEMATIC DIAGRAM

MONO INPUT 25
GROUP/AUX 28
MASTER L 29
MASTER R 32
POWER SUPPLY 33
LED METER 35

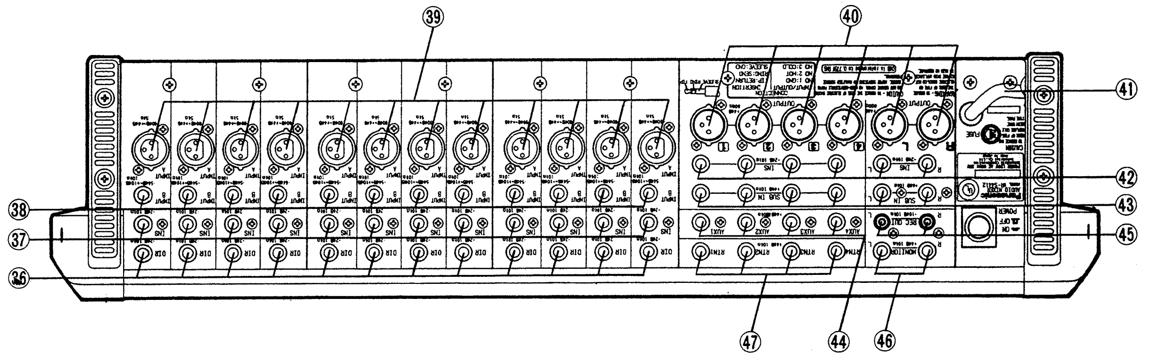
CONDUCTOR VIEW

MONO INPUT 26
GROUP/AUX 27
MASTER L 30
MASTER R 31
POWER SUPPLY 34
LED METER 36
TOTAL CONNECTION DIAGRAM 37

EXPLODED VIEW

CONSOLE 38
MONO INPUT 39
GROUP/AUX 40
REPLACEMENT PARTS LIST .... 41 - 47

MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS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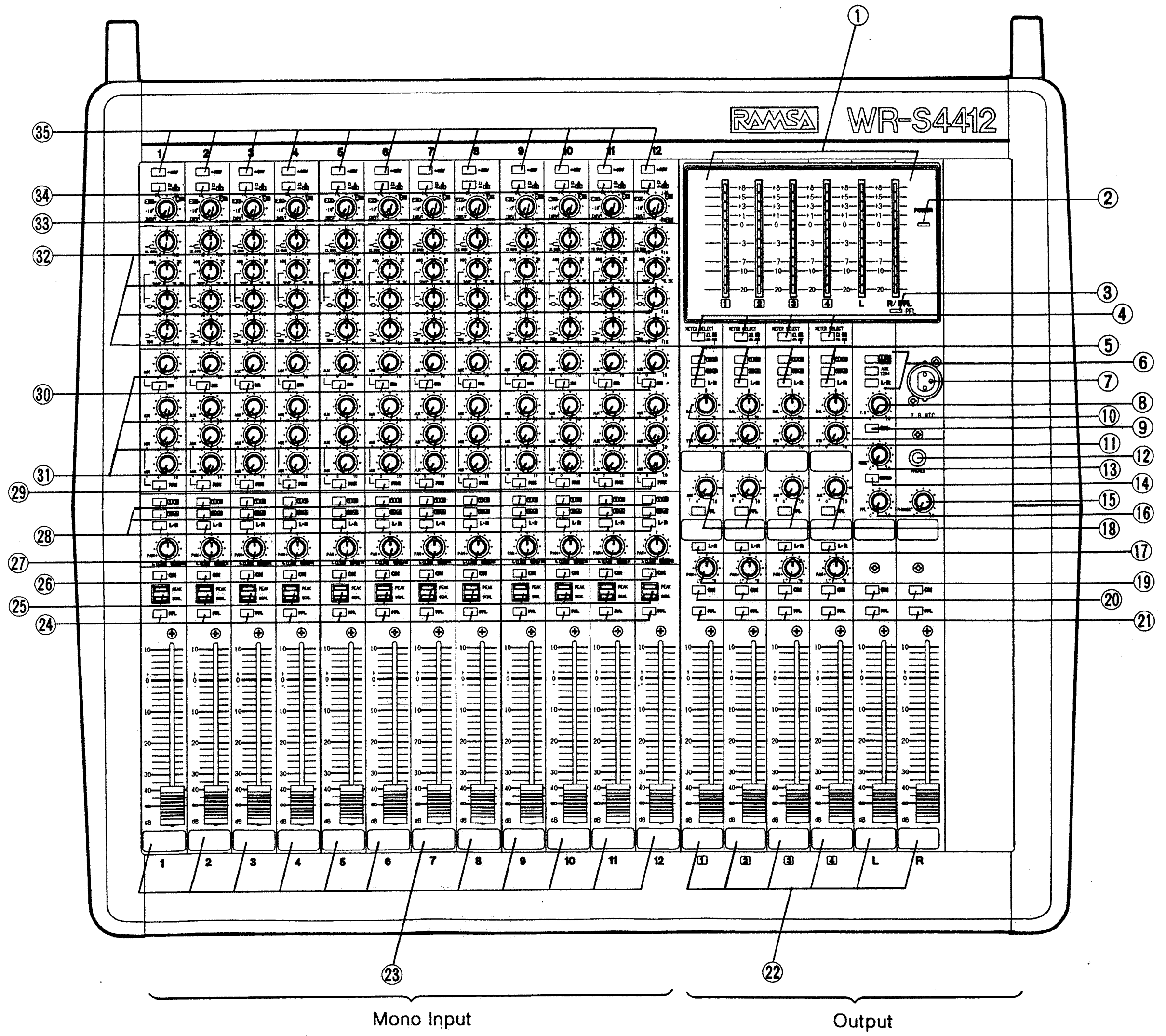
RAMSA
WR-S4412
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Mono Input
Output

1. **12-point LED Bar-graph Meters (1/2/3/4/L/R)**
   These LED peak reading meters are designed to have quick attack time to monitor transients and slow decay time for optimum visual indication. There are 3 color ranges, along with dB graduations relative to nominal level: Green for −20 dB to 0 dB, Yellow for +1 dB to +5 dB, Red for +8 dB or more.

1 : This meter displays Group 1 output level or AUX 1 output level.
2 : This meter displays Group 2 output level or AUX 2 output level.
3 : This meter displays Group 3 output level or AUX 3 output level.
4 : This meter displays Group 4 output level or AUX 4 output level.

L :
This meter displays Left Master output level.

R/PFL :
This meter displays Right Master output level or PFL level. Meters 1-4 are switch selectable. The R/PFL meter is automatically switched any time a PFL button is pressed.

2. **Power Indicator LED**
   This LED lights when the Power Switch is turned on.

3. **PFL Indicator LED (R/PFL)**
   This LED lights when any PFL Switch is turned on. The R/PFL 12-point LED bar-graph meter displays PFL signal level when this LED is lit.

4. **Meter Selection Switches (METER SELECT, 1/2/3/4)**
   These switches are used to select either Group or AUX bus signals to be displayed by the 12-point LED bar-graph meters 1-4.
   Pressing the switch down selects the AUX signal. The up position selects Group.

5. **AUX Return Assign Switches**
   These switches route the stereo AUX Return signals to the group and master busses. The left input signal can be sent to Group 1, Group 3, and L Master. The right input signal can be sent to Group 2, Group 4, and R Master.
   For more information regarding connection of AUX Return signals, see number 3-1 on page 8, "AUX Return Input Jacks".

6. **Talk Back Assign Switches**
   These route the signal input via the TB Mic connector. The talk back signal is assignable to all group, master, and AUX busses.

7. **Talk Back Microphone Connector (T.B MIC)**
   This XLR female connector is used for the connection of a talk back microphone.

8. **Talk Back Level Control**
   This is a dual-function control to simultaneously adjust the talk back input sensitivity and the output level of the talk back signal.

9. **Talk Back ON/OFF Switch (ON)**
   This is a push-push type switch. The Talkback function is active while the switch is held in the down position.

10. **Balance Controls (BAL, L-R)**
    These controls set the balance between the Left and Right AUX RTN input signals.

11. **AUX Return Input Controls (RTN 1/2/3/4, 0-10)**
    These controls set the level of Stereo AUX Return input signal to be sent to the assigned busses.

12. **Phone Jack (PHONES)**
    1/4" TRS phone jack for headphone.
    Maximum output is 160 mW / 400 ohms.

13. **Monitor Master Level Control (MONI, 0-10)**
    This control adjusts the level of the monitor outputs. The takeoff point for the monitor signal is either L/R Master or PFL. When any PFL button is depressed, it takes priority over the L/R Master for being sent to the Monitor and Headphone Outputs. Therefore, any buss can be monitored, as well as any input channel.

14. **Mono Monitor Switch (MONO)**
    Pressing this switch down to the mono position combines the left and right monitor into a mono signal, then sends it to the left and right Monitor outputs.

15. **Headphone Level Control (PHONES, 0-10)**
    This control is used to set the headphone level. The signal sent to the headphone output is the same as the one being sent to the monitor outputs (L/R Master or PFL).

16. **PFL Control (PFL 0-10)**
    This control adjusts the level of the PFL signal present at the monitor outputs and headphone outputs. Proper setting of this control avoids variances in level when switching between Master and PFL mode.

17. **Group L-R Send Switches (L-R)**
    When these switches are turned on, the Group signal is sent to the L/R Master busses. This is useful for creating a submix.

18. **AUX 1-4 Master Level Controls (AUX, 0-10)**
    These controls adjust the overall level of each AUX output signal.

19. **Group Pan Pot Controls (PAN, L-R)**
    These controls are used to adjust the left/right balance of the Group signal sent to the Master L and R channels via the L/R Send switches.

20. **Channel On Switches (ON)**
    These are the on/off switches for the Group and Master Outputs.

21. **Pre Fader Listening Switches (PFL)**
    These switches may be pressed to send any of the Group, AUX, or Master busses to the Monitor and Headphone Outputs. The PFL signal takes priority over the L/R Master monitor signal.

22. Output Faders

These high precision type 100 mm carbon faders are used to adjust the Group and Master output level.

Position 0 represents the nominal output level.

23. Input Faders

These high precision type 100 mm carbon faders are used to control the level of input channels signal being sent to the mixing busses. Fader should be at "0" for obtaining nominal level.

24. Pre Fader Listening Switches (PFL)

These switches may be pressed to send individual input channel or mixing buss signal to the Monitor and Headphone outputs. Multiple PFL buttons may be turned on to monitor any combination of signals.

The PFL signal takes priority over the L/R Master monitor signal, which is present at the Monitor and Headphone outputs when all PFL buttons are off.

25. Signal Indicator LED (PEAK/SIGNAL)

These LEDs indicate input head amplifier signal status. These light green when the signal reaches a level approximately 8 dB below nominal, and turn red when the signal is within 8 dB of clipping level.

In case of a consistent red indication , the input level control (INPUT) should be turned to counterclockwise.

26. Channel On Switches (ON)

The input signal sent to the Master, Group, and AUX mixing busses is passed (on) or muted (off) by these switches.

27. Pan Pot Controls (PAN, L/1/3,R/2/4)

These controls divide the input signal into separate left and right, and sets the relative level (balance) between them.

This mixer has odd/even group panning, which means that Groups 1/2 and Groups 3/4 are set up as stereo pairs. Therefore, panning left will cause signals to be sent to L Master, Group 1, and Group 3. Panning right will send the signals to R Master, Group 2, and Group 4.

28. Program Bus Assign Switches (1/2, 3/4, L-R)

Input signals may be sent to Groups 1-4 and L-R Master Busses by means of these switches.

29. Pre Fader Switches (PRE)

These switches select between a pre- or post-fader takeoff point for the AUX 3 and AUX 4 signals. Pre is normally used for monitoring applications, while post is effective when using AUX 3 and AUX 4 as effects sends.

The pre-fader signal can be set to either pre- or post-EQ by means of internal jumpers.

NOTE:

JUMPER MODIFICATIONS MUST BE PERFORMED BY AUTHORIZED SERVICE PERSONNEL.

30. Direct Out Switches (DIR)

Selects the signal path for AUX 1. When the switch is down, signal is sent from the AUX 1 control to the input channel's Direct Output. The up position routes the AUX 1 signal to the AUX 1 mixing buss. No signal is present at the channel's Direct Output when this switch is up.

Example for use: A particular effect may be needed for only 1 input source. The input source gets routed to the effect via its input channel's Direct Output, while the send level is set by the AUX 1 control. Without this function, the master AUX 1 output would have to be connected to that effect. AUX 1 could then not be used on any other input channel, since the effect was intended for use with only the one input source. In other words, the number of effects sends available is not limited by the 4 AUX busses.

31. AUX Level Controls (AUX 0-10)

These set the signal level being sent to each of the AUX mixing busses (and Direct Out in the case of AUX 1)

32. Equalizer

Three-band equalizer :

The high and low bands are a shelving type with cutoff frequencies of 12.5 kHz and 70 Hz respectively. The mid band is a peaking type with a continuously variable frequency range of 200 Hz - 6.3 kHz.

High : ± 15 dB (± 12 dB at 12.5 kHz) Shelving
Mid : ± 15 dB (200 Hz to 6.3 kHz) Peak/dip
Low : ± 15 dB (± 12 dB at 70 Hz) Shelving

33. Input Level Controls (INPUT)

These controls set the sensitivity of the A and B universal mic/line inputs.

Proper setting of these controls provides optimum signal-to-noise ratio and approx. 22 dB of headroom between −2 dB and −60 dB at A-input. (More than 18 dB between +4 dB and −2 dB.) The A input nominal level range is −60 dB to +4 dB. The B input nominal level range is −54 dB to +10 dB.

34. Input Selector Switches

These switches are used for selecting either the A (XLR) Input or B (1/4" TRS Phone) Input.

Both A Input and B Input are electronically balanced.

35. 48V Phantom Power Switches (+48V)

These are ON/OFF switches for 48 volt phantom power, which is used by condensor microphones.

Phantom power is supplied only to the A input (XLR) connector.

36. Direct Out Jacks (DIR,−2 dB 10 kohms)

(1/4" Phone Jack, −2 dB, 10 kohms, unbalanced)

Output signal for each input channel. The Direct Out is fed by the AUX 1 control when the DIR switch is pushed in. May be used for effects send, multitrack tape recorder send, etc.

37. **Insertion Jacks (INS, −2 dB 10 kohms)**
(1/4" TRS Phone Jacks, −2 dB, 10 kohms, unbalanced)
A pre-equalizer patch point. Equipment connected to this point becomes, in effect, part of the mixer circuit. Used for signal processors as such as equalizers, compressors, limiters, etc.
A Y-cord adaptor must be used in order to split this terminal into separate output (Send) and input (Return) connectors. Insertion jack terminals are wired as:
Tip : Return
Ring : Send
Sleeve : Earth
Insertion points are provided for every input channel - 12(WR-S4412), 16(WR-S4416), 24(WR-S4424).

38. **1/4" Phone Input B Jacks**
(INPUT B, −54 dB - +10 dB, 10 kohms)
These are universal Mic/Line input connectors, which are electronically balanced, configured to accept a 1/4" stereo plug wired as:
Tip: Hot
Ring: Cold
Sleeve: Earth
When connecting unbalanced equipment to the mixer, use a 1/4" mono plug wired as tip: hot, and sleeve: earth.
The B input accepts input signals with a nominal level between −54 dB and +10 dB. Input sensitivity is set by the input level control on each channel.
The number of the 1/4" Phone Input B Jacks are :
12(WR-S4412), 16(WR-S4416), 24(WR-S4424)

39. **XLR Input A Connectors**
(INPUT A, −60 dB - +4 dB, 5 kohms)
These are universal Mic/Line XLR input connectors, electronically balanced, and configured as:
Pin 1: Earth
Pin 2: Hot
Pin 3: Cold
The A input accepts input signals with a nominal level between −60 dB and +4 dB. Input sensitivity is set by the input level control on each channel.
48 V phantom power is supplied to pins 2 and 3 of the connector when the 48 V switch of that channel is turned on.
The number of the XLR input connectors are :
12(WR-S4412), 16(WR-S4416), 24(WR-S4424)

40. **Group and Master Output Connectors (1/2/3/4/L/R)**
Output connectors for the Group 1-4 and L-R Master busses (XLR, 600 ohms, +4 dB, electronically balanced).

41. **AC Power Cord**

42. **Group and Master Insertion Jacks**
(INS, −2 dB, 10 kohms)
(1/4" TRS Phone Jack, −2 dB, 10 kohms, Unbalanced)
Group and Master insertion jacks provide a patch point in the output stages for interconnection of accessory equipment.
A Y-cord adaptor must be used in order to split this terminal into separate output (Send) and input (Return) connectors. Insertion jack terminals are wired as:
Tip : Return
Ring : Send
Sleeve : Earth

43. **Sub Input Connectors (SUB IN, +4 dB 10 koms)**
(1/4" Phone Jack, +4 dB, 10 kohms, Unbalanced)
These are inputs which apply signals directly to the Group 1-4 and L-R Master Busses. These may be used for connection of additional mixers, pre-mixed signals, or any other line-level signal.

44. **AUX Output Connectors**
(AUX 1/2/3/4, +4 dB 600 ohms)
(1/4" Phone Jack, +4 dB, 600 ohms, Unbalanced)
Output connectors for the AUX 1-4 Busses.

45. **Rec Output Jacks**
(REC OUT, R/L, −10 dB 10 kohms)
(RCA pin jacks, −10 dB, 10 kohms, Unbalanced)
Master L and R pre-insertion level signals for sending to tape recorder.

46. **Monitor Output Jacks**
(MONITOR, L/R, +4 dB 10 kohms)
(1/4" Phone Jack, +4 dB, 10 kohms, Unbalanced)
These jacks provide a monitor feed of the L/R Master output or PFL signals. PFL has priority over the L/R Master signal.
This monitor signal is also sent to the Headphone output connector.

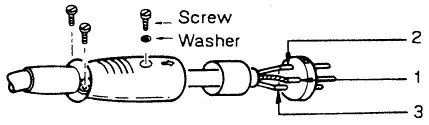
47. **AUX Return Input Jacks**
(RTN 1/2/3/4, +4 dB 10 koms)
(1/4" TRS phone jacks, +4 dB, 10 kohms, Unbalanced)
By using 1/4" stereo jacks, these accept 2 signals on 1 connector to input the returns from a stereo effect or any other stereo line level source (cassette, CD, DAT, etc.).
Tip = L channel
Ring = R channel
Input to the left channel may be sent to Group 1, Group 3, and L Master. Input to the right channel may be sent to Group 2, Group 4, and R Master.
In case it is desired to send a mono return signal, it is accomplished as follows:
A. Apply the return signal to either left or right of the AUX Return.
B. Assign it to a single group bus; for example, Group 1 (press 1/2 assign switch and turn Balance control fully left).
C. Press the L-R Send switch for Group 1 in. Set the L-R Send Pan control to center detent.
D. The AUX Return signal will now be sent equally to the left and right master busses.

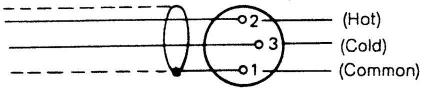
IN/OUT CABLE INFORMATIONS

1. XLR Type Connectors

1-1. Balanced Connection (Input)

Connect 2-conductor shielded cable as shown below.

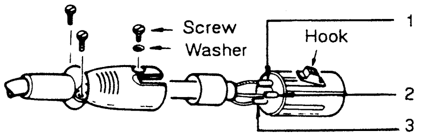

Screw
Washer
2
1
3

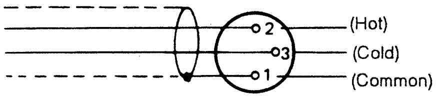

2
3
1
(Hot)
(Cold)
(Common)

3-pin XL-type
male connector

1-2. Balanced Connection (Output)

Connect 2-conductor shielded cable as shown below.


Screw
Washer
Hook
1
2
3


2
3
1
(Hot)
(Cold)
(Common)

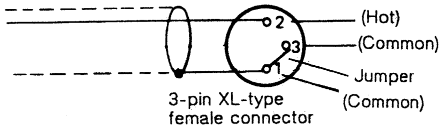
3-pin XL-type
female connector

1-3. Unbalanced connection

When connecting unbalanced equipment to the mixer, connect follows : Pin 1 - Common, Pin 2 - Hot, Pin 3 - Common

CAUTION :

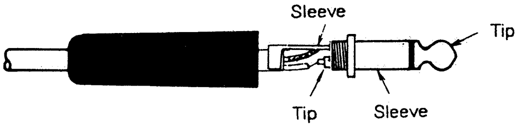
Do not connect unbalanced microphones to the mixer when using phantom power. Power supply and microphone may be damaged.

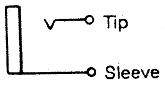

2
3
1
(Hot)
(Common)
Jumper
(Common)

3-pin XL-type
female connector

2. 1/4" Tip-sleeve Phone Plug (Input and Output)

Connect single-conductor shielded cable as shown below (Tip - Hot, Sleeve - Common).


Sleeve
Tip
Tip
Sleeve

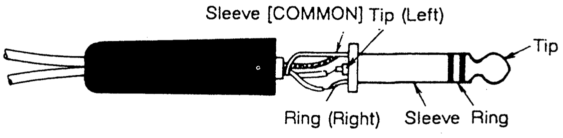


Tip-sleeve phone jack

3. 1/4" Tip-ring-sleeve Phone Plug

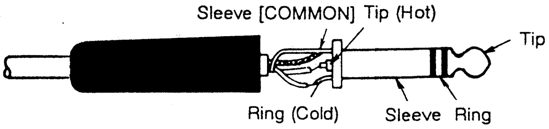
3-1. AUX Return

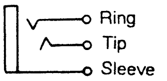
Connect 2-conductor shielded cable as shown below.


Sleeve [COMMON]
Tip (Left)
Tip
Ring (Right)
Sleeve
Ring

3-2. Input B (Balanced connection)

Connect 2 single-conductor shielded cables as shown below.


Sleeve [COMMON]
Tip (Hot)
Tip
Ring (Cold)
Sleeve
Ring


Ring
Tip
Sleeve

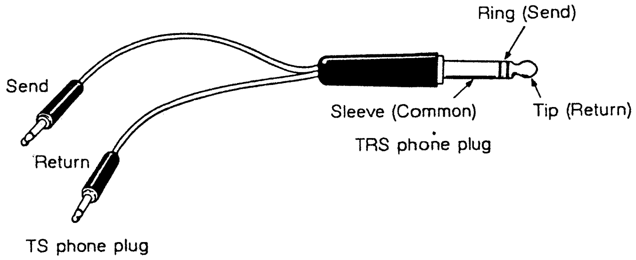
Tip-ring-sleeve phone jack

Note :

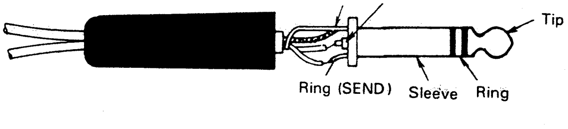
For unbalanced connection on Input "B", use a single conductor shielded cable with a 1/4" mono plug, as shown in 2.

3-3. Insertion

For insertion at the patch points, use a Y-cord adaptor, wired as tip ; return, ring ; send and sleeve ; common on a 1/4" TRS phone plug.

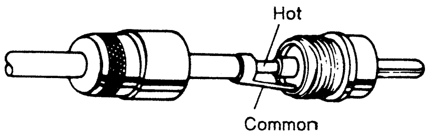

Ring (Send)
Send
Sleeve (Common)
Tip (Return)
TRS phone plug
Return
TS phone plug

Connect 2 single-conductor shielded cables as shown below. The other end of the shielded cables must have appropriate mating plugs or jacks, or be connected to a patch bay.


Sleeve (COMMON)
Tip (RETURN)
Tip
Ring (SEND)
Sleeve
Ring

4. RCA Pin-plug Input and Output

Connect single-conductor shielded cable as shown below.



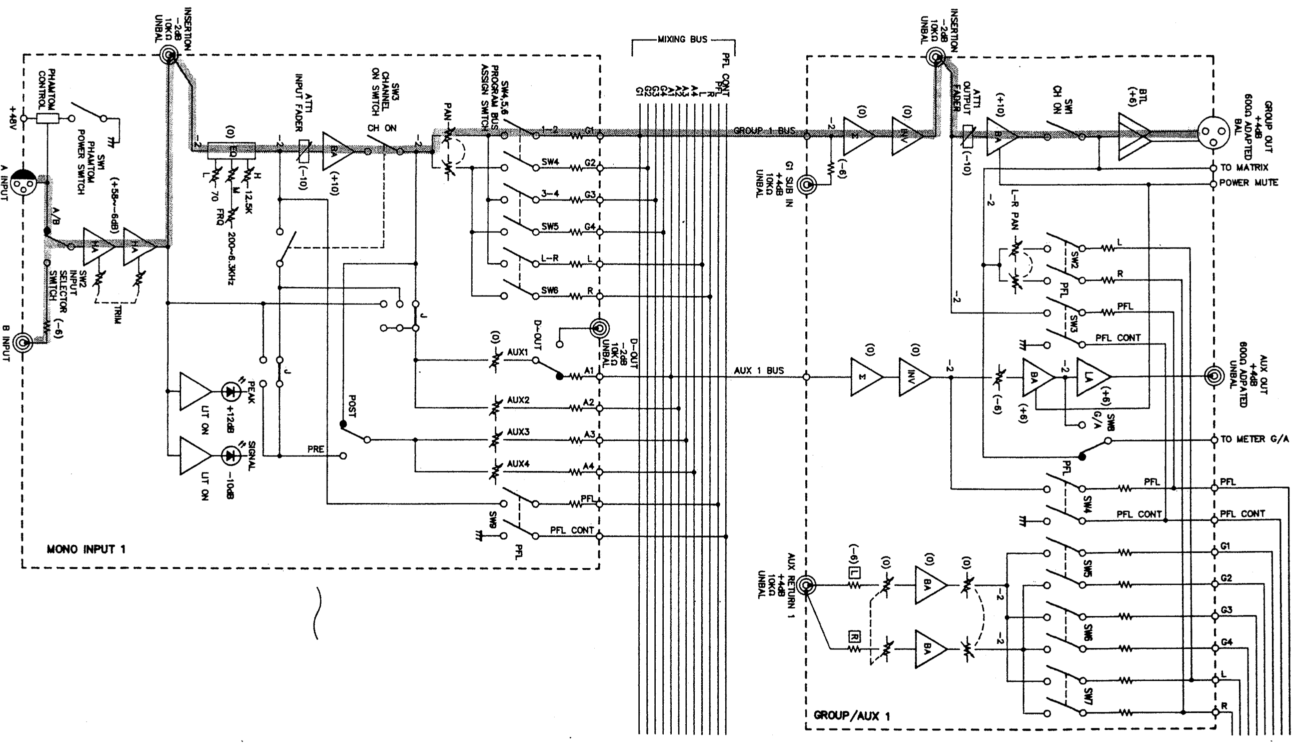
OPERATION CHECK

Instructions for Operation Check Items 1-6

- Input and output levels are referenced to 0 dB = 0.775 Vrms except where indicated otherwise. Input levels shown in the chart below will produce output levels as indicated, assuming that pan controls are centered, and outputs are terminated with 600 ohms where noted. If those outputs are not terminated, higher output levels will result.
  All procedures which include application of signal to Mono Inputs state A and B inputs should be checked. However, if it is verified that both A and B inputs are working for any one procedure, then the remaining procedures may be run using either A or B only.

Mono Input section	Normal input level		
Controls and switches	Setting	Input	Level
Input Section A/B Switch TRIM control	A or B At "−60" on scale (MAX)	A Input B Input	−54 dB at 1 kHz −48 dB at 1 kHz
Equalizer	At "0" on scale (CENTER DETENT)	Peak level indicator	
Input fader	At "0" on scale	Apply −36 dB signal to A Input. Insure "Peak" indicator is lit.	

1. A INPUT→GROUP OUT
B INPUT→GROUP OUT


INSERTION −2dB 10KΩ UNBAL
+48V
PHAMTOM CONTROL
SW1 PHAMTOM POWER SWITCH
(+58~−6dB)
A INPUT −60~+4dB 5KΩ BAL
A/B
HA
HA
SW2 INPUT SELECTOR SWITCH (−6)
TRIM
B INPUT −54~+10dB 10KΩ BAL
(0)
EQ
H 12.5K
M
L 70
FRQ 200~6.3KHz
ATT1 INPUT FADER
(−10)
BA
(+10)
SW3 CHANNEL ON SWITCH
CH ON
PAN
SW4,5,6 PROGRAM BUS ASSIGN SWITCH
1−2
SW4
3−4
SW5
L−R
SW6
G1
G2
G3
G4
L
R
D−OUT
D−OUT −2dB 10KΩ UNBAL
AUX1
AUX2
AUX3
AUX4
A1
A2
A3
A4
PFL
PFL CONT
SW9
PFL
POST
PRE
PEAK +12dB
SIGNAL −10dB
LIT ON
MONO INPUT 1
MIXING BUS
G1 G2 G3 G4 A1 A2 A3 A4 L R PFL PFL CONT
GROUP 1 BUS
AUX 1 BUS
G1 SUB IN +4dB 10KΩ UNBAL
Σ
INV
(−6)
ATT1 OUTPUT FADER
SW1 CH ON
BTL (+6)
GROUP OUT +4dB 600Ω ADAPTED BAL
TO MATRIX
POWER MUTE
L−R PAN
SW2
SW3
AUX OUT +4dB 600Ω ADAPTED UNBAL
LA
SW8 G/A
TO METER G/A
SW4
AUX RETURN 1 +4dB 10KΩ UNBAL
SW5
SW6
SW7
GROUP/AUX 1

Set the control and swiches on the Mono input section and Group/AUX section as follows.

■ MONO Input Section

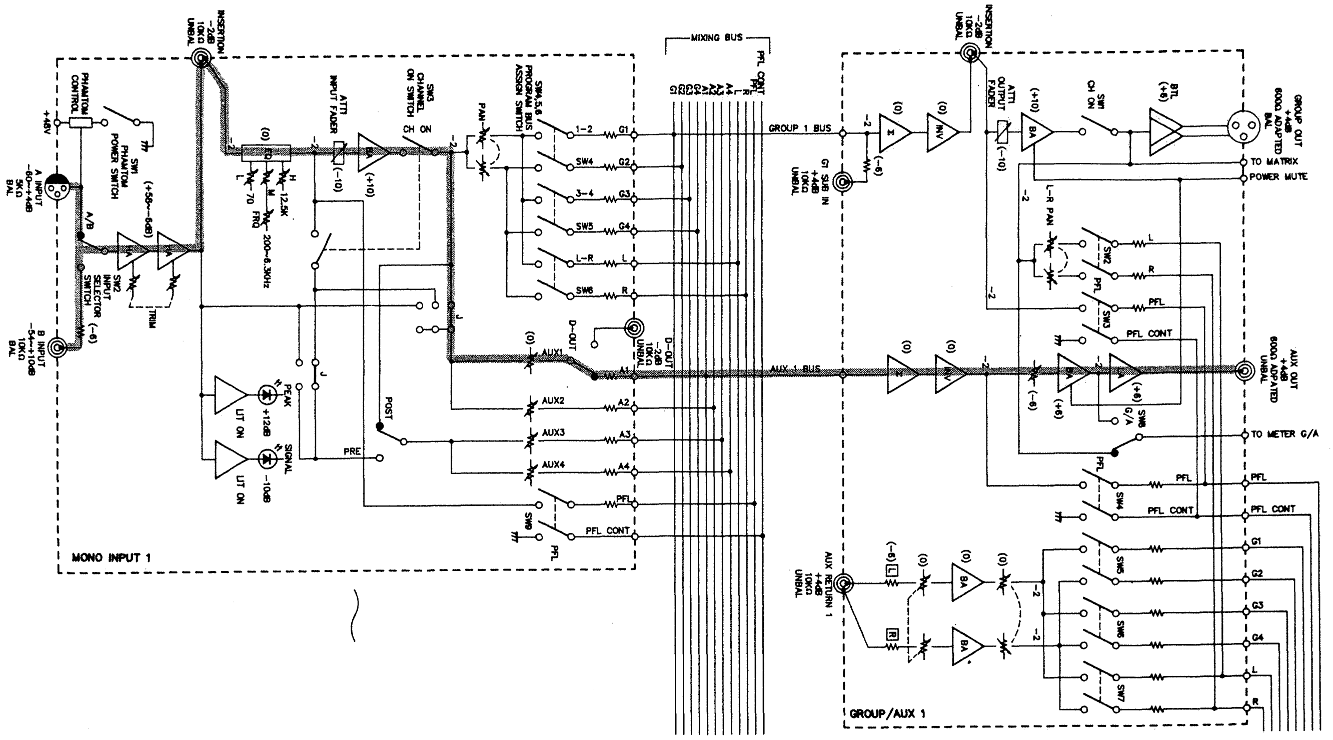
PAN control: At center position
Channel ON Switch : At ON position
Program Bus Assign Switch 1-4: At ON position

■ Group/AUX Section

Group Fader: "0" on Scale
Channel ON Switch: At ON position

- Check that the output levels at Group out are +4 dB with 600 ohms load.
- Check all the A INPUTs and B INPUTs in the same way.

2. A INPUT→AUX OUTPUT
B INPUT→AUX OUTPUT


MIXING BUS
MONO INPUT 1
GROUP 1 BUS
AUX 1 BUS
AUX1
AUX2
AUX3
AUX4
PRE
POST
CH ON
PFL CONT
TO MATRIX
POWER MUTE
TO METER G/A
PFL
G1
G2
G3
G4
L
R
GROUP/AUX 1

Set the controls and switches on the Mono input section and Group/AUX section as follows.

- **MONO Input Section**

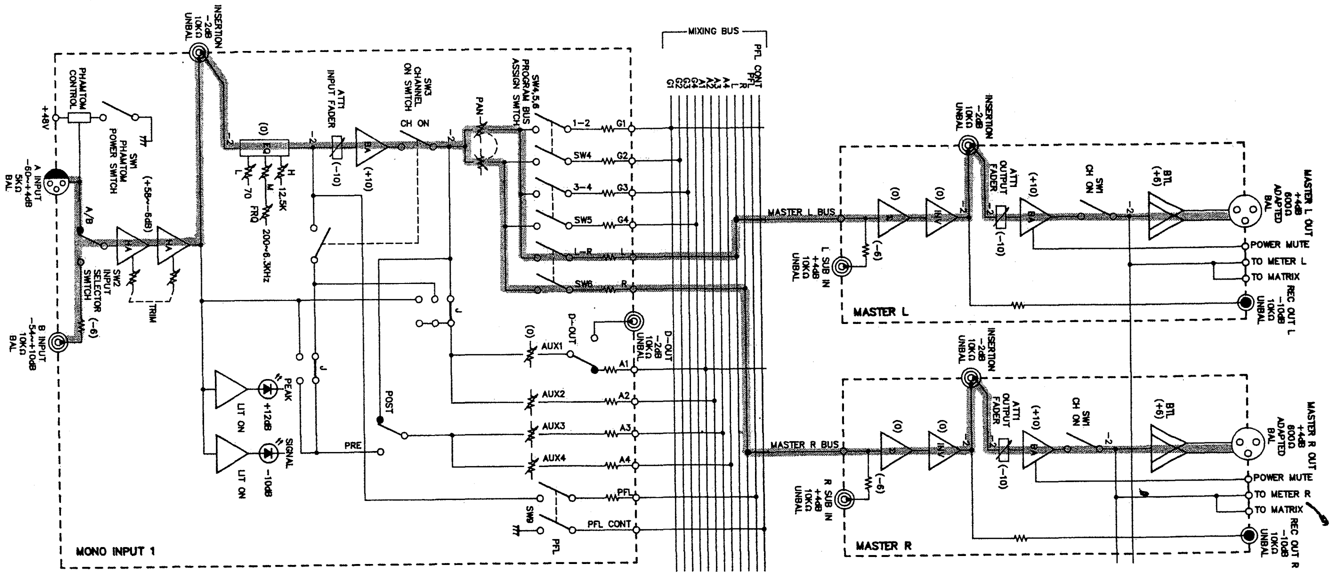
Channel ON Switch:	At ON position
AUX Level control:	At approximately 3 o'clock position.

- **Group/AUX Section**

AUX 1-4 Master Level Control: Nominal level setting

- Check that the output levels at AUX out is +4 dB with 600 ohms load.
- Check all the A INPUTs and B INPUTs.

3. A INPUT→MASTER L/R OUTPUT
B INPUT→MASTER L/R OUTPUT


MIXING BUS
MONO INPUT 1
MASTER L BUS
MASTER R BUS
MASTER L
MASTER R
AUX1
AUX2
AUX3
AUX4
PRE
POST
CH ON
PFL CONT
POWER MUTE
TO METER L
TO METER R
TO MATRIX

Set the controls and switches on the Mono input section and Master L/R section as follows.

- **MONO Input Section**

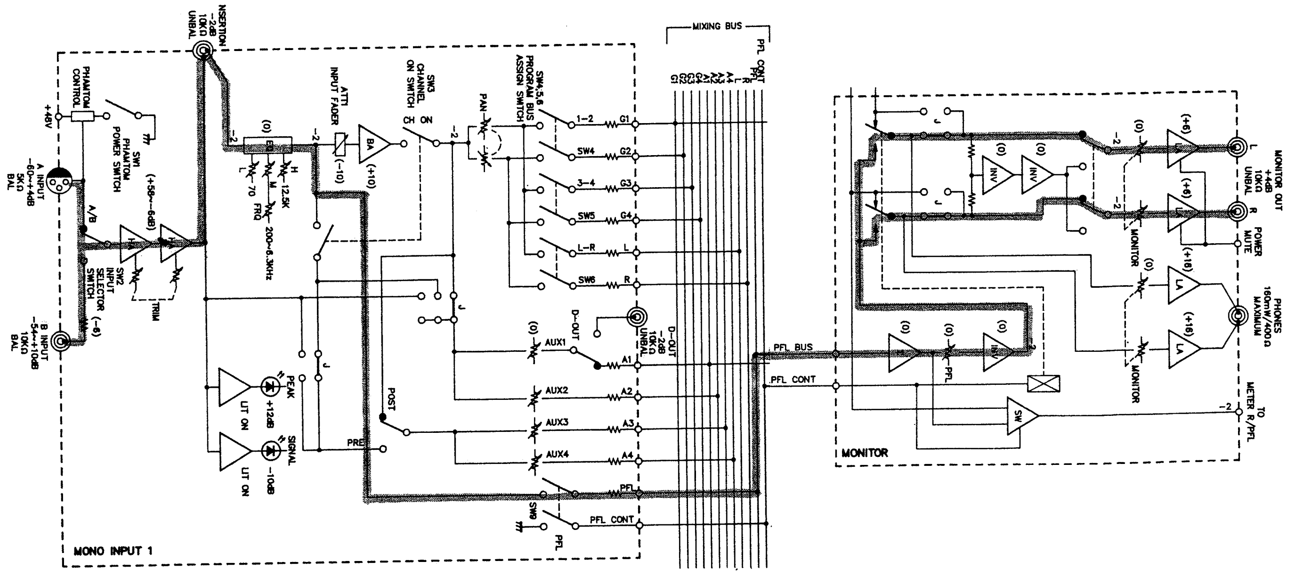
PAN Control:	At center position
Program Bus Assign Switch L/R:	At ON position

- **Master L/R Section**

Master Fader:	At "0" on scale
Channel ON Switch:	At ON position

- Check that the output levels at Master L/R are +4 dB 600 ohms load.
- Check all the A INPUTs and B INPUTs in the same way.

4. A INPUT→MONITOR OUT (STEREO)
B INPUT→MONITOR OUT (STEREO)


INSERTION -2dB 10KΩ UNBAL
PHANTOM CONTROL
+48V
SW1 PHANTOM POWER SWITCH
A INPUT -60~+4dB 5KΩ BAL
B INPUT -54~+10dB 10KΩ BAL
A/B
SW2 INPUT SELECTOR SWITCH
TRIM
(+58~-6dB)
(-6)
H 12.5K
M 200~6.3KHz FRQ
L 70
ATTI INPUT FADER
(-10)
BA (+10)
SW3 CHANNEL ON SWITCH
CH ON
PAN
SW4,5,6 PROGRAM BUS ASSIGN SWITCH
1-2
SW4
3-4
SW5
L-R
SW6
G1
G2
G3
G4
L
R
D-OUT -2dB 10KΩ UNBAL
AUX1
AUX2
AUX3
AUX4
A1
A2
A3
A4
POST
PRE
PFL
PFL CONT
SW9
PEAK +12dB
SIGNAL -10dB
LIT ON
MONO INPUT 1
MIXING BUS
PFL BUS
INV
MONITOR OUT +4dB 10KΩ UNBAL
POWER MUTE
PHONES 160mW/400Ω MAXIMUM
(+6)
(+16)
MONITOR
SW
TO METER R/PFL
MONITOR

Set the controls and switches on the Mono input section and Monitor section as follows.

■ MONO Input Section

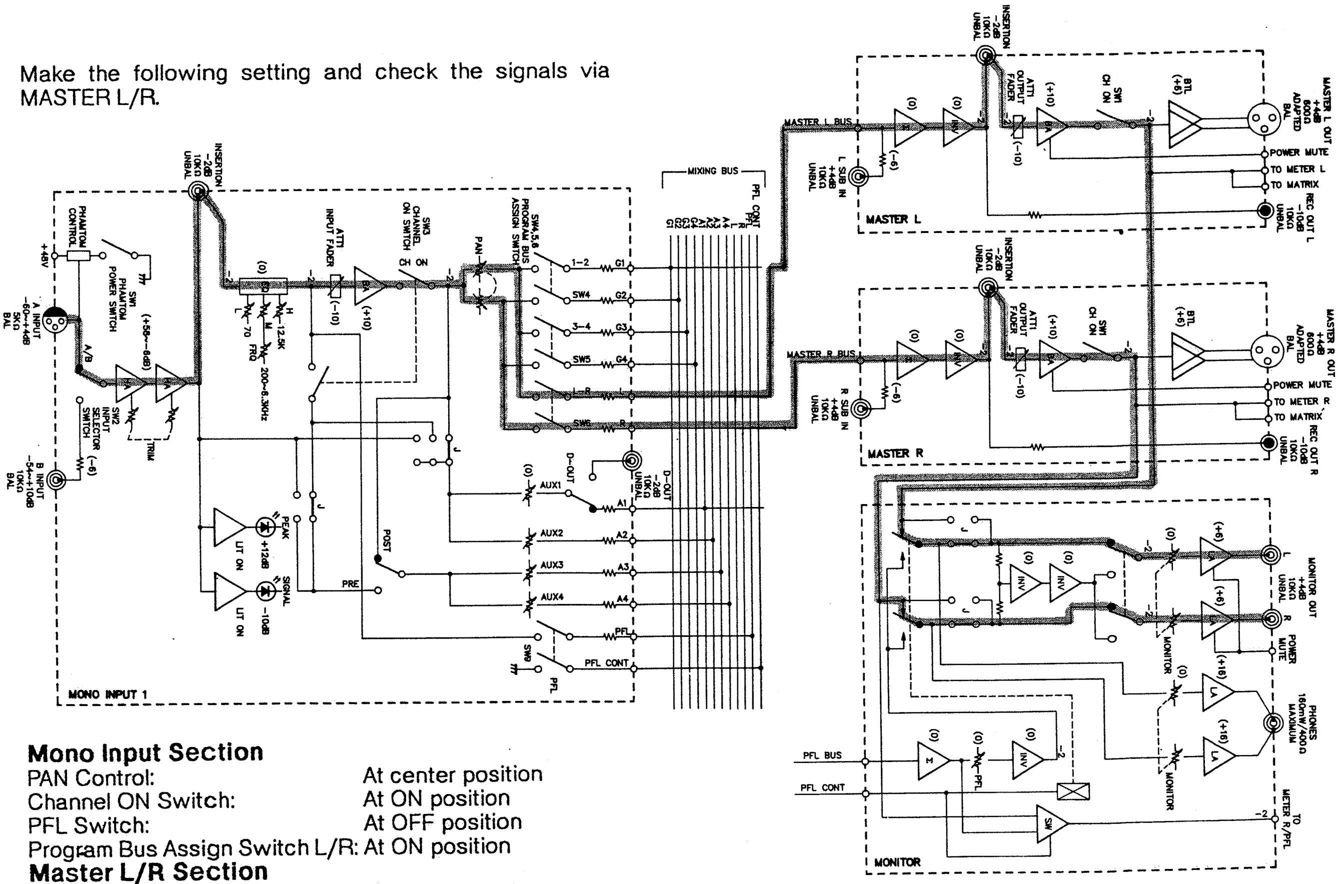
PFL Switch:	At ON position

■ Monitor Section

PFL Control:	At approximately 3 o'clock position
Mono Monitor Switch:	At STEREO position
Monitor control:	At approximately 3 o'clock position

- Check that the output levels at Monitor out is +4 dB with 10 kohms load.
- Insure "PFL" indicator is lit.
- Check all the A INPUTs and B INPUTs in the same way.

Make the following setting and check the signals via MASTER L/R.


MONO INPUT 1
MIXING BUS
MASTER L BUS
MASTER R BUS
L SUB IN +4dB 10KΩ UNBAL
R SUB IN +4dB 10KΩ UNBAL
ATTI OUTPUT FADER
SW1 CH ON
BTL (+6)
MASTER L OUT +4dB 600Ω ADAPTED BAL
MASTER R OUT +4dB 600Ω ADAPTED BAL
POWER MUTE
TO METER L
TO METER R
TO MATRIX
REC OUT L -10dB 10KΩ UNBAL
REC OUT R -10dB 10KΩ UNBAL
MASTER L
MASTER R
MONITOR OUT +4dB 10KΩ UNBAL
PHONES 160mW/400Ω MAXIMUM
PFL BUS
PFL CONT
TO METER R/PFL
MONITOR

■ Mono Input Section

PAN Control:	At center position
Channel ON Switch:	At ON position
PFL Switch:	At OFF position
Program Bus Assign Switch L/R:	At ON position

■ Master L/R Section

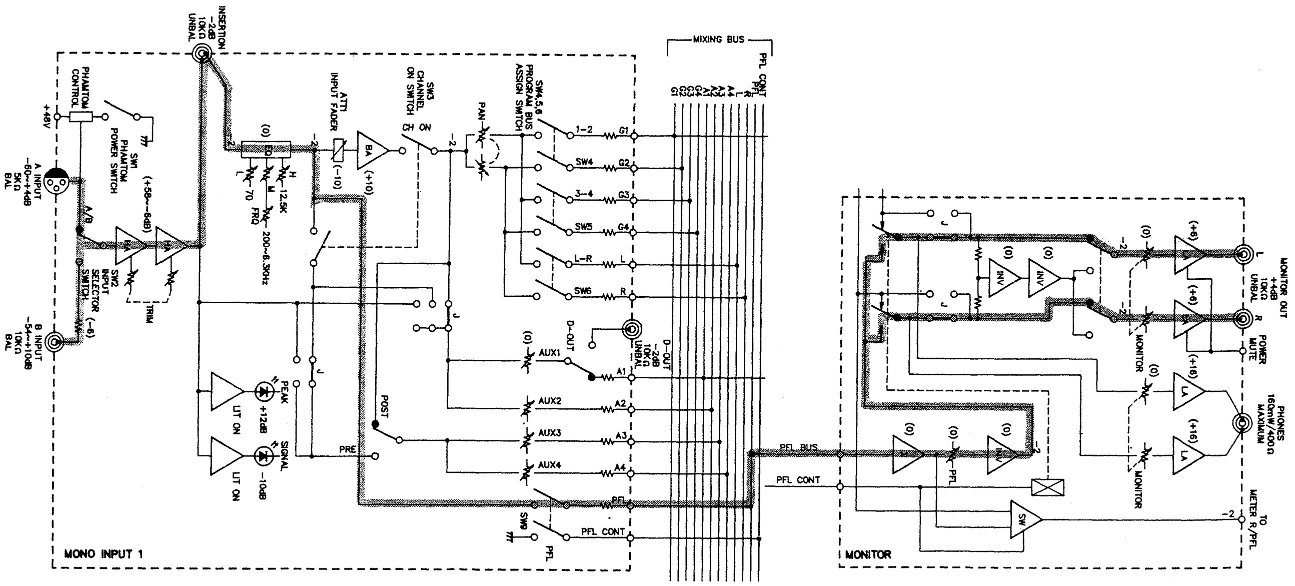
Master Fader:	At "0" on scale
Channel ON Switch:	At ON position

■ Monitor section

Mono Monitor Switch:	At STEREO position
Monitor Master Level Control:	At "10" on scale

- Check that the output levels at Monitor out L/R are +4 dB with 10 kohms load.
- Check all the A INPUTs and B INPUTs in the same way.

5. A INPUT→MONITOR OUTPUT (MONO)
B INPUT→MONITOR OUTPUT (MONO)


INSERTION -2dB 10KΩ UNBAL
MIXING BUS
PFL CONT
PHANTOM CONTROL
+48V
SW1 PHANTOM POWER SWITCH
A INPUT -60~+4dB 5KΩ BAL
A/B
SW2 INPUT SELECTOR SWITCH
(+58~-6dB)
TRIM
B INPUT -54~+10dB 10KΩ BAL
EQ
H 12.5K
M 200~6.3KHz
L 70
FRQ
ATT/ INPUT FADER
BA
SW3 CHANNEL ON SWITCH
CH ON
PAN
SW4,5,6 PROGRAM BUS ASSIGN SWITCH
1-2
SW4
3-4
SW5
L-R
SW6
G1
G2
G3
G4
L
R
D-OUT
D-OUT -2dB 10KΩ UNBAL
AUX1
AUX2
AUX3
AUX4
A1
A2
A3
A4
POST
PRE
PEAK +12dB
SIGNAL -10dB
LIT ON
PFL
PFL CONT
SW9
MONO INPUT 1
PFL BUS
INV
MONITOR
LA
MONITOR OUT +4dB 10KΩ UNBAL
POWER MUTE
PHONES 160mW/400Ω MAXIMUM
TO METER R/PFL
SW
MONITOR

Set the controls and switches on the Mono input section and Monitor section as follows.

■ MONO Input Section

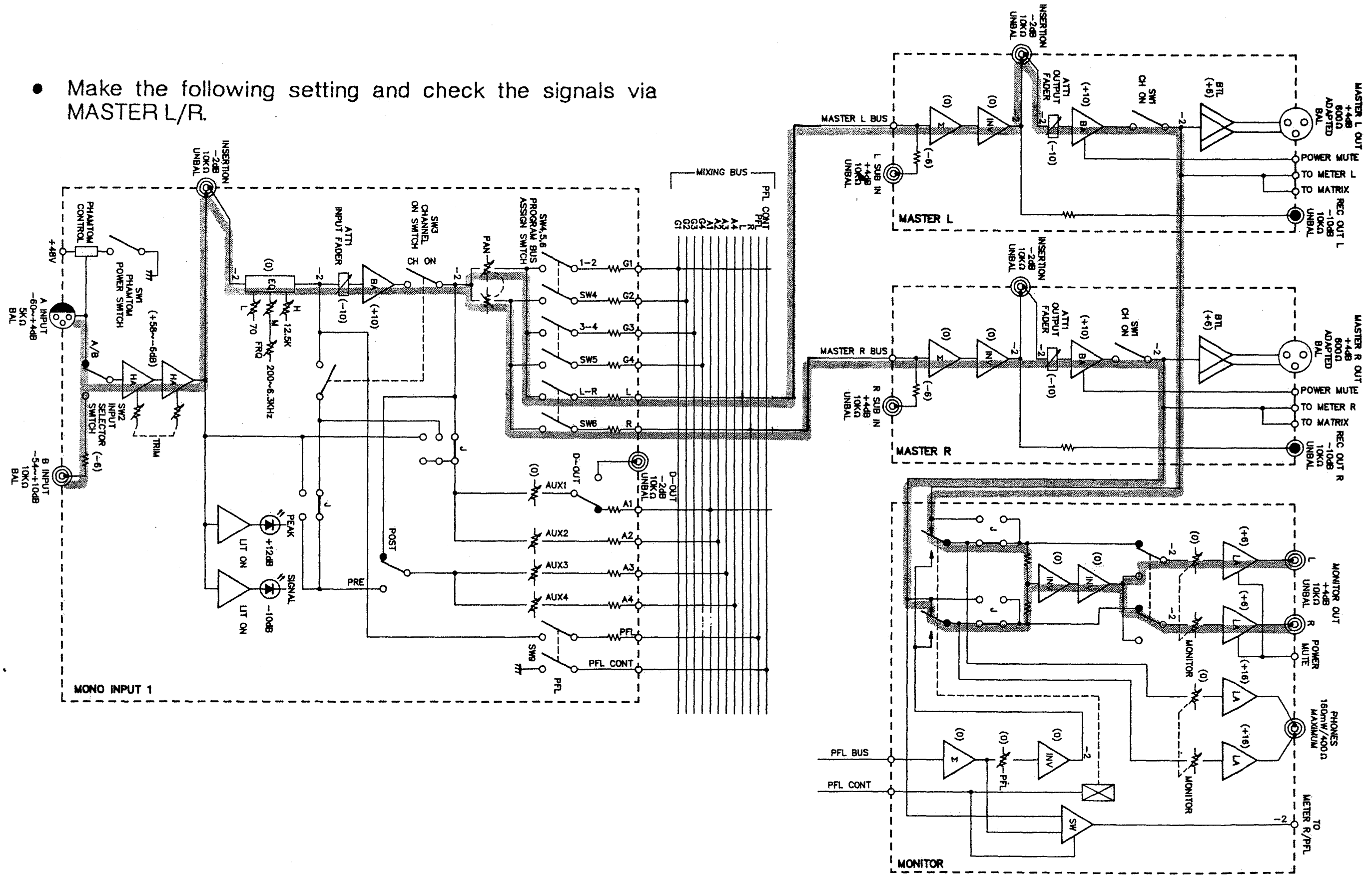
PFL Switch:	At ON position

■ Monitor Section

PFL control:	At "10" on scale
Mono Monitor Switch:	At MONO position
Monitor Master Level Control:	At "10" on scale

- Check that the output levels at Monitor out L/R are +4 dB with 10 kohms load.
- Check all the A INPUTs and B INPUTs in the same way.

- Make the following setting and check the signals via MASTER L/R.


INSERTION -2dB 10KΩ UNBAL
MASTER L BUS
ATT/ OUTPUT FADER
SW1 CH ON
BTL
MASTER L OUT +4dB 600Ω ADAPTED BAL
L SUB IN +4dB 10KΩ UNBAL
POWER MUTE
TO METER L
TO MATRIX
REC OUT L -10dB 10KΩ UNBAL
MASTER L
MASTER R BUS
MASTER R OUT +4dB 600Ω ADAPTED BAL
R SUB IN +4dB 10KΩ UNBAL
TO METER R
REC OUT R -10dB 10KΩ UNBAL
MASTER R
MIXING BUS
PHANTOM CONTROL
A INPUT -60~+4dB 5KΩ BAL
B INPUT -54~+10dB 10KΩ BAL
EQ
BA
CH ON
PAN
D-OUT
AUX1
AUX2
AUX3
AUX4
POST
PRE
PEAK +12dB
SIGNAL -10dB
LIT ON
PFL CONT
MONO INPUT 1
MONITOR OUT +4dB 10KΩ UNBAL
PHONES 160mW/400Ω MAXIMUM
PFL BUS
PFL CONT
TO METER R/PFL
MONITOR

■ Mono Input Section

Channel ON Switch:	At ON position
PAN Control:	At center position
PFL Switch:	At OFF position
Program Bus Assign Switch L/R:	At ON position

■ Master L/R Section

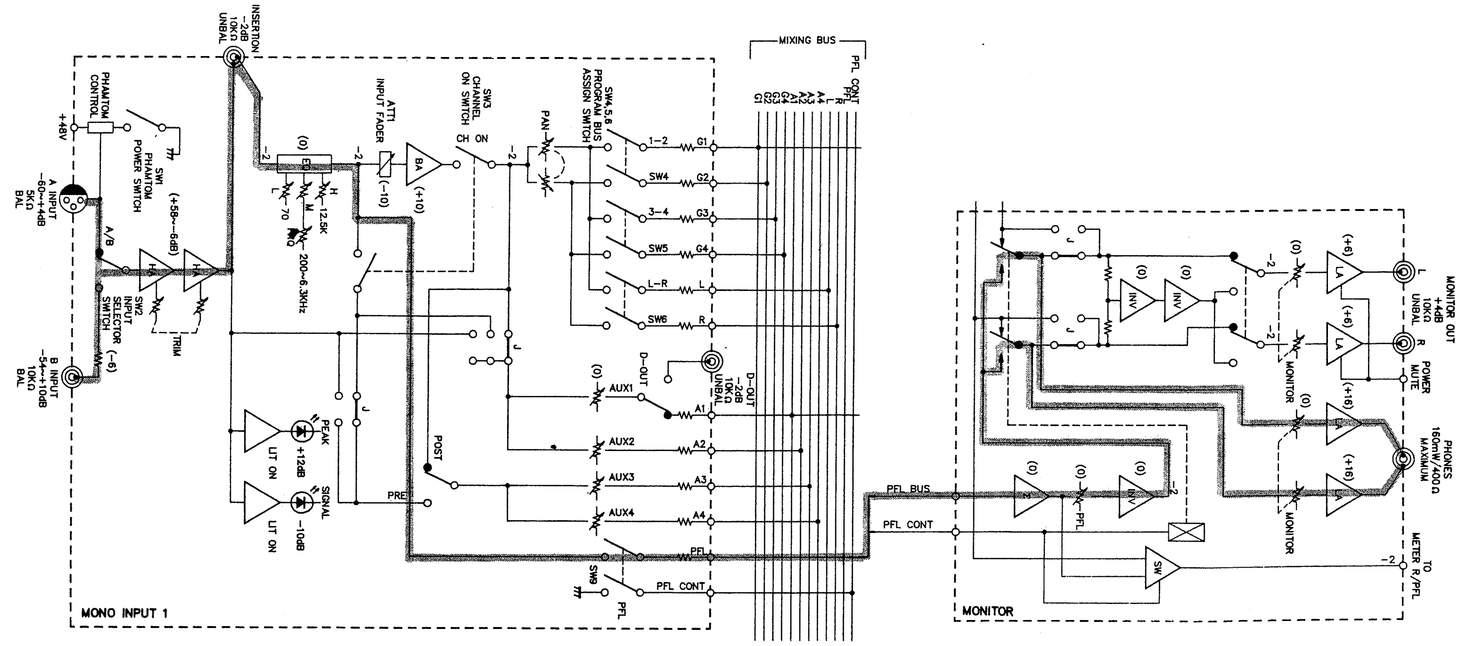
Master Fader:	At "0" on scale
Channel ON Switch:	At ON position

■ Monitor Section

Mono Monitor Switch:	At STEREO position

- Check that the output levels at Monitor out L/R are +4 dB with 10 kohms load.

6. A INPUT→PHONES OUTPUT
B INPUT→PHONES OUTPUT


INSERTION -2dB 10KΩ UNBAL
MIXING BUS
PHANTOM CONTROL
+48V
SW1 PHANTOM POWER SWITCH
A INPUT -60~+4dB 5KΩ BAL
B INPUT -54~+10dB 10KΩ BAL
SW2 INPUT SELECTOR SWITCH
TRIM
ATT1 INPUT FADER
SW3 CHANNEL ON SWITCH
SW4,5,6 PROGRAM BUS ASSIGN SWITCH
PAN
CH ON
D-OUT -2dB 10KΩ UNBAL
AUX1
AUX2
AUX3
AUX4
POST
PRE
PEAK +12dB
SIGNAL -10dB
LIT ON
SW9
PFL
PFL CONT
MONO INPUT 1
PFL BUS
MONITOR
MONITOR OUT +4dB 10KΩ UNBAL
POWER MUTE
PHONES 160mW/400Ω MAXIMUM
TO METER R/PFL

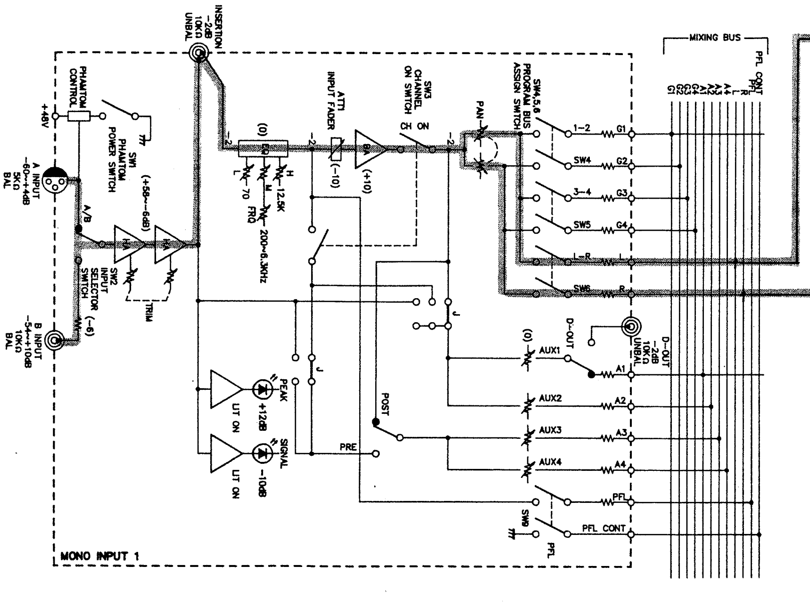
Set the controls and switches on the Mono input section and Monitor section as follows.

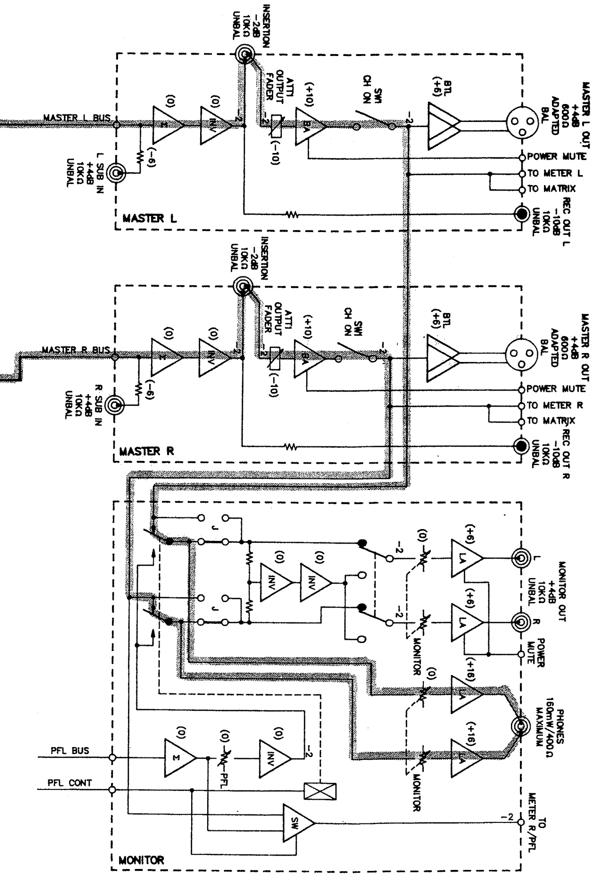
- **MONO Input Section**
  PFL Switch: At ON position

- **Monitor Section**
  PFL control: At "10" on scale
  PHONES control: At "10" on scale

- Check that the output levels at Phones out L/R are 160 mW with 400 ohms load.
- Insure "PFL" indicator is lit.
- Check all the A INPUTs and B INPUTs in the same way.

- Make the following setting and check the signal via MASTER L/R.


INSERTION -2dB 10KΩ UNBAL
MIXING BUS
PHANTOM CONTROL
+48V
A INPUT -60~+4dB 5KΩ BAL
B INPUT -54~+10dB 10KΩ BAL
ATT1 INPUT FADER
SW3 CHANNEL ON SWITCH
SW4,5,6 PROGRAM BUS ASSIGN SWITCH
PAN
CH ON
D-OUT -2dB 10KΩ UNBAL
PFL CONT
MONO INPUT 1


MASTER L BUS
MASTER R BUS
ATT OUTPUT FADER
SW1 CH ON
BTL (+6)
MASTER L OUT +4dB 600Ω ADAPTED BAL
MASTER R OUT +4dB 600Ω ADAPTED BAL
L SUB IN +4dB 10KΩ UNBAL
R SUB IN +4dB 10KΩ UNBAL
POWER MUTE
TO METER L
TO METER R
TO MATRIX
REC OUT L -10dB 10KΩ UNBAL
REC OUT R -10dB 10KΩ UNBAL
MASTER L
MASTER R
PFL BUS
PFL CONT
MONITOR
MONITOR OUT +4dB 10KΩ UNBAL
PHONES 160mW/400Ω MAXIMUM
TO METER R/PFL

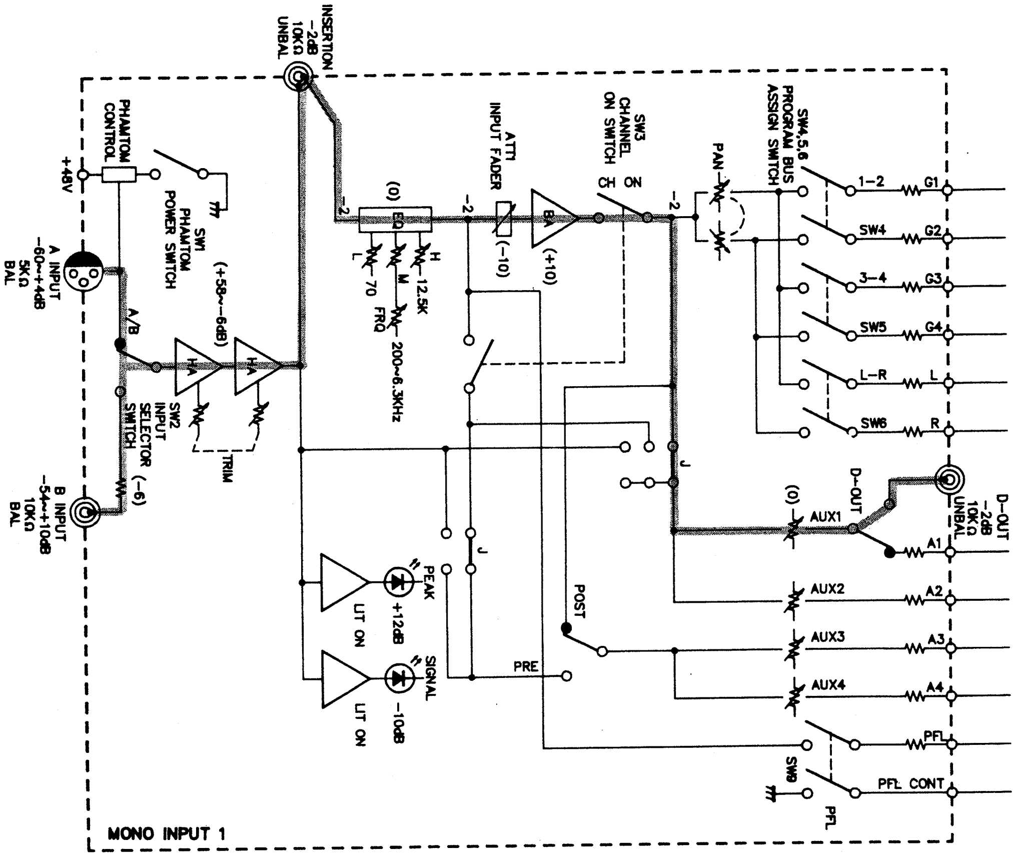
- **MONO Input Section**
  Channel ON Switch: At ON position
  PAN control: At center position
  PFL Switch: At OFF position
  Program Bus Assign Switch L/R: At ON position

- **Master L/R Section**
  Master Fader: At "0" on scale
  Channel ON Switch: At ON position

- **Monitor Section**
  Headphones Level control: At "10" on scale

- Check that the output levels at Phones out L/R are 160 mW with 400 ohms load.
- Check all the A INPUTs and B INPUTs in the same way.

7. A INPUT→D-OUT
B INPUT→D-OUT


INSERTION
-2dB
10KΩ
UNBAL
PHANTOM CONTROL
+48V
SW1 PHANTOM POWER SWITCH
A INPUT
-60~+4dB
5KΩ
BAL
A/B
HA
HA
(+58~-6dB)
SW2 INPUT SELECTOR SWITCH
(-6)
TRIM
B INPUT
-54~+10dB
10KΩ
BAL
(0)
EQ
H
12.5K
M
L
70
FRQ
200~6.3KHz
-2
ATT INPUT FADER
(-10)
BA
(+10)
SW3 CHANNEL ON SWITCH
CH ON
-2
PAN
SW4,5,6 PROGRAM BUS ASSIGN SWITCH
1-2
G1
SW4
G2
3-4
G3
SW5
G4
L-R
L
SW6
R
J
J
PEAK
+12dB
LIT ON
SIGNAL
-10dB
LIT ON
POST
PRE
D-OUT
(0)
AUX1
A1
D-OUT
-2dB
10KΩ
UNBAL
AUX2
A2
AUX3
A3
AUX4
A4
PFL
SW8
PFL CONT
PFL
MONO INPUT 1

Set the controls and switches on the Mono input section as follows.

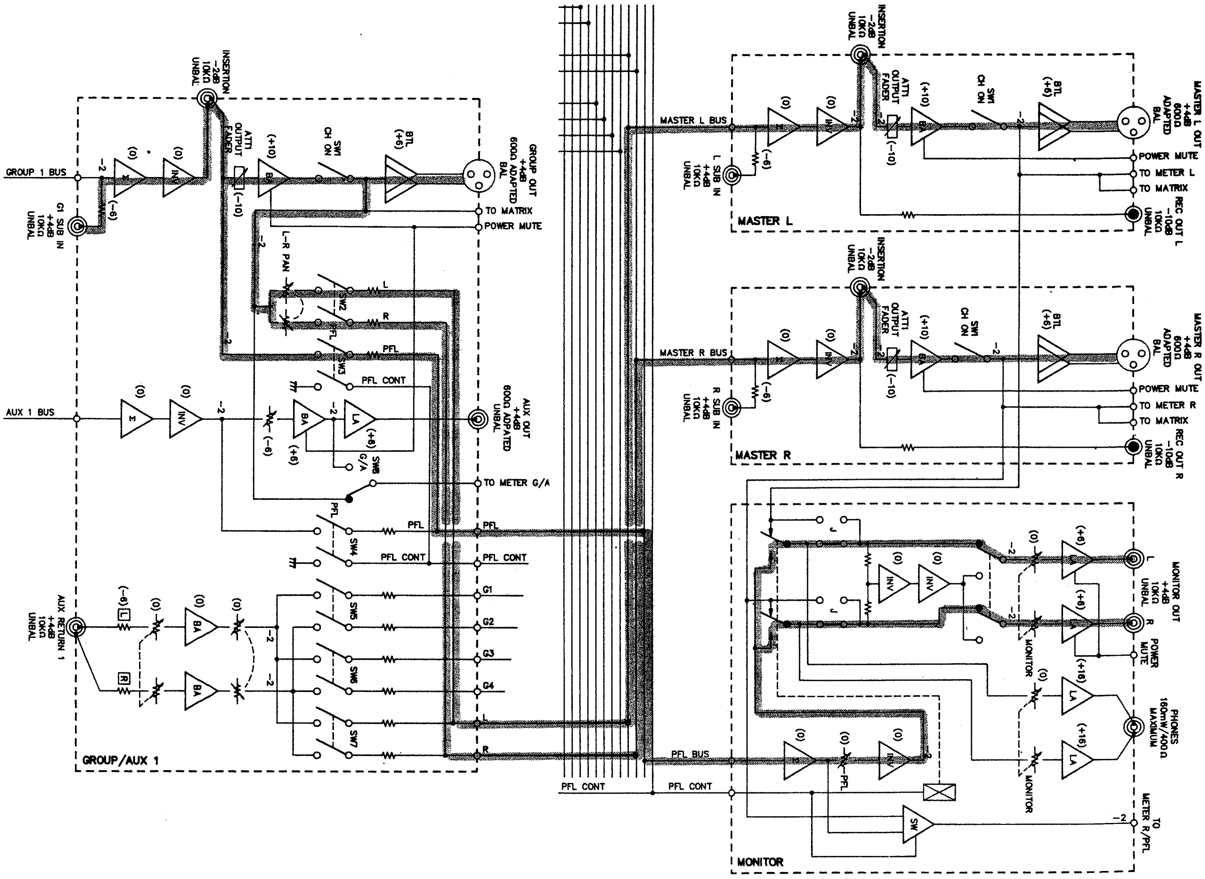
- **Mono Input Section**

Input fader:	At "0" on scale
Channel ON Switch:	At ON position
AUX Level control:	At approximately 3 o'clock position
DIR Switch:	At ON position

- Check that the output levels at D-OUT is −2 dB with 10 kohms load.
- Check all the A INPUTs and B INPUTs in the same way.

8. G1 SUB INPUT→GROUP OUTPUT G1 SUB INPUT→MONITOR OUTPUT G1 SUB INPUT→MASTER L/R G1 SUB INPUT→PHONES OUTPUT

INPUT	LEVEL
G1 SUB INPUT	1 kHz +4 dB 10 kohms


GROUP 1 BUS
G1 SUB IN +4dB 10KΩ UNBAL
INSERTION -2dB 10KΩ UNBAL
ATTI OUTPUT FADER
SW CH ON
BTL (+6)
GROUP OUT +4dB 600Ω ADAPTED BAL
TO MATRIX
POWER MUTE
L-R PAN
SW2
PFL
SW3
PFL CONT
AUX 1 BUS
AUX OUT +4dB 600Ω ADAPTED UNBAL
SW8 G/A
TO METER G/A
SW4
SW5
SW6
SW7
G1
G2
G3
G4
L
R
AUX RETURN 1 +4dB 10KΩ UNBAL
GROUP/AUX 1
PFL CONT
MASTER L BUS
L SUB IN +4dB 10KΩ UNBAL
MASTER L OUT +4dB 600Ω ADAPTED BAL
TO METER L
REC OUT L -10dB 10KΩ UNBAL
MASTER L
MASTER R BUS
R SUB IN +4dB 10KΩ UNBAL
MASTER R OUT +4dB 600Ω ADAPTED BAL
TO METER R
REC OUT R -10dB 10KΩ UNBAL
MASTER R
MONITOR OUT +4dB 10KΩ UNBAL
POWER MUTE
PHONES 160mW/400Ω MAXIMUM
PFL BUS
MONITOR
TO METER R/PFL

Set the controls and switches on the GROUP/AUX section as follows.

■ Group/AUX Section

Group fader:	At "0" on scale
Channel ON Switch:	At ON position

- Check that the output levels at Group out is +4 dB with 600 ohms load.

Set the controls and switches on the Group/AUX section and Monitor section as follows.

PFL Switch:	At ON position

■ Monitor Section

Mono Monitor Switch:	At STEREO posotion
Monitor Master Level control:	At "10" on scale

- Check that the output levels at Monitor L/R out are +4 dB with 10 kohms load.
- Insure "PFL" indicator is lit.

Set the controls and switches on the Group/AUX section and Master L/R section as follows.

■ Group/AUX Section

Group fader:	At "0" on scale
Channel ON Switch:	At ON position
L-R Switch:	At ON position
PAN Control:	At center position
PFL Switch:	At ON position

■ Master L/R Section

Master fader:	At "0" on scale
Channel ON Switch:	At ON position

- Check that the output levels at Master L/R out are +4 dB with 600 ohms load.

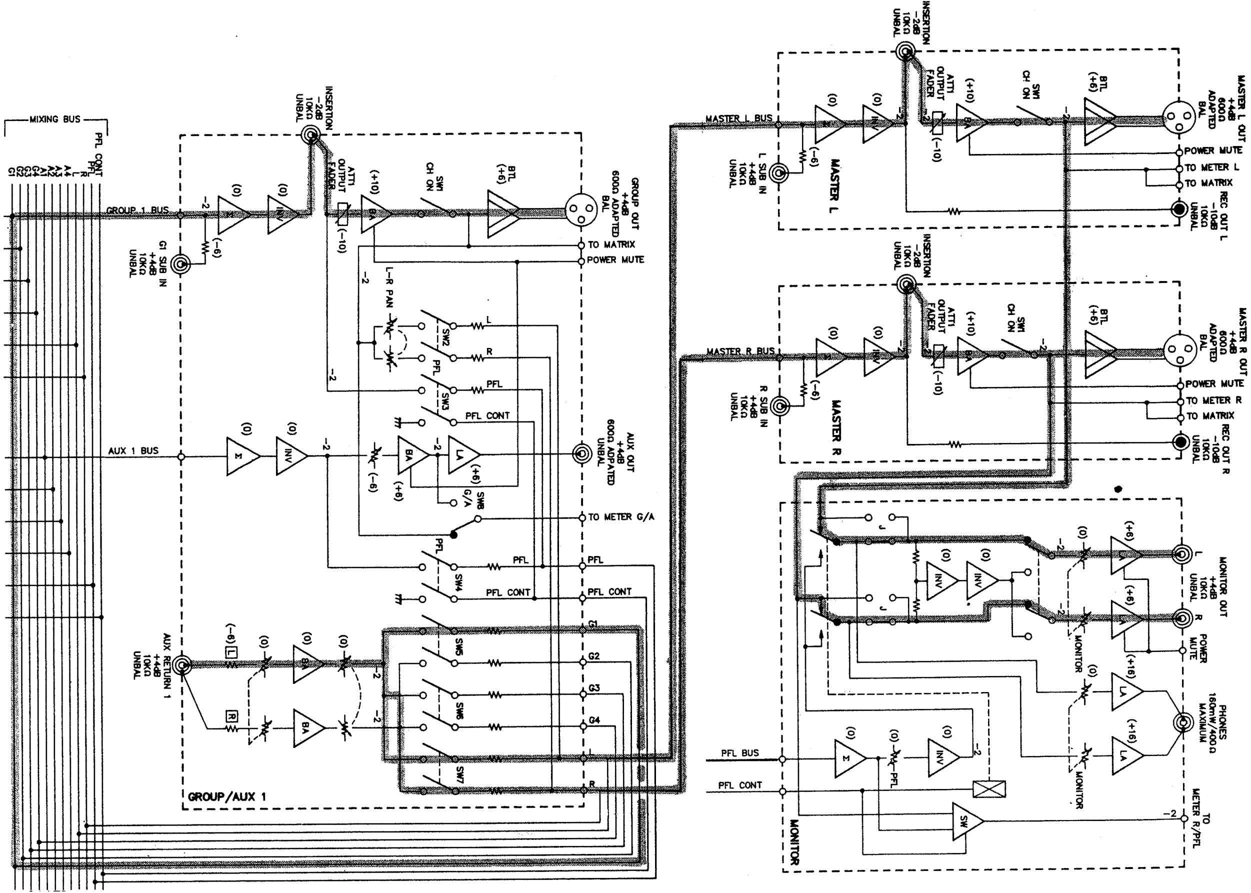
Set the controls and switches on the Group/AUX section and Monitor section as follows.

■ Monitor Section

PFL control:	At "10" on scale
Headphones Level control:	At "10" on scale

- Check that the output levels at Phones L/R are 160 mW with 400 ohms load.
- Insure "PFL" indicator is lit.

9. AUX RETURN INPUT→GROUP OUTPUT
AUX RETURN INPUT→MASTER L/R OUTPUT
AUX RETURN INPUT→MONITOR OUTPUT
AUX RETURN INPUT→PHONES OUTPUT


MIXING BUS
G1
G2
G3
G4
A1
A2
A3
A4
L
R
PFL
PFL CONT
GROUP 1 BUS
INSERTION
−2dB
10KΩ
UNBAL
G1 SUB IN
+4dB
10KΩ
UNBAL
ATT1
OUTPUT
FADER
(0)
(+10)
(−6)
(−10)
−2
BA
INV
Σ
LA
SW1
CH ON
BTL
(+6)
GROUP OUT
+4dB
600Ω ADAPTED
BAL
TO MATRIX
POWER MUTE
L−R PAN
SW2
SW3
SW4
SW5
SW6
SW7
SW8
PFL
PFL CONT
L
R
AUX 1 BUS
AUX OUT
+4dB
600Ω ADPATED
UNBAL
G/A
TO METER G/A
AUX RETURN 1
+4dB
10KΩ
UNBAL
G1
G2
G3
G4
GROUP/AUX 1
MASTER L BUS
L SUB IN
+4dB
10KΩ
UNBAL
MASTER L
MASTER L OUT
+4dB
600Ω
ADAPTED
BAL
TO METER L
REC OUT L
−10dB
10KΩ
UNBAL
MASTER R BUS
R SUB IN
+4dB
10KΩ
UNBAL
MASTER R
MASTER R OUT
+4dB
600Ω
ADAPTED
BAL
TO METER R
REC OUT R
−10dB
10KΩ
UNBAL
J
(+6)
(+16)
MONITOR OUT
+4dB
10KΩ
UNBAL
POWER
MUTE
MONITOR
PHONES
160mW/400Ω
MAXIMUM
PFL BUS
PFL CONT
SW
TO
METER R/PFL
MONITOR

Set the controls and switches on the Group/AUX section as follows.

Control/Switch	Setting	Input	Level
Level Control	At nominal position	AUX Return Input	1 kHz +4 dB
Balance Control	At center position		
Group fader	At "0" on scale		
Channel ON Switch	At ON position		

■ **Group/AUX Section**

Program Bus Assign Switch 1-4: At ON position

- Check that the output levels at Group1-4 out are +4 dB with 600 ohms load.

Set the control and switches on the Group/AUX section and Master L/R section as follows.

■ **Group/AUX Section**

Program Bus Assign Switch 1-4: At OFF position
Program Bus Assign Switch L/R: At ON position

■ **Master L/R Section**

Master fader:	At "0" on scale
Channel ON Switch:	At ON position

- Check that the output levels at Master L/R out is +4 dB with 600 ohms load.

Set the controls and switches on the Group/AUX section and Master L/R section as follows.

■ **Group/AUX Section**

Program Bus Assign Switch 1-4: At OFF position
Program Bus Assign Switch L/R: At ON position

■ **Master L/R Section**

Master fader:	At "0" on scale
Channel ON Switch:	At ON position
Mono Monitor Switch:	At STEREO position
Monitor Master Level control:	At "10" on scale

- Check that the output levels at Monitor L/R out is +4 dB with 10 kohms load.

Set the controls and switches on the Group/AUX section and Master L/R section as follows.

■ **Group/AUX Section**

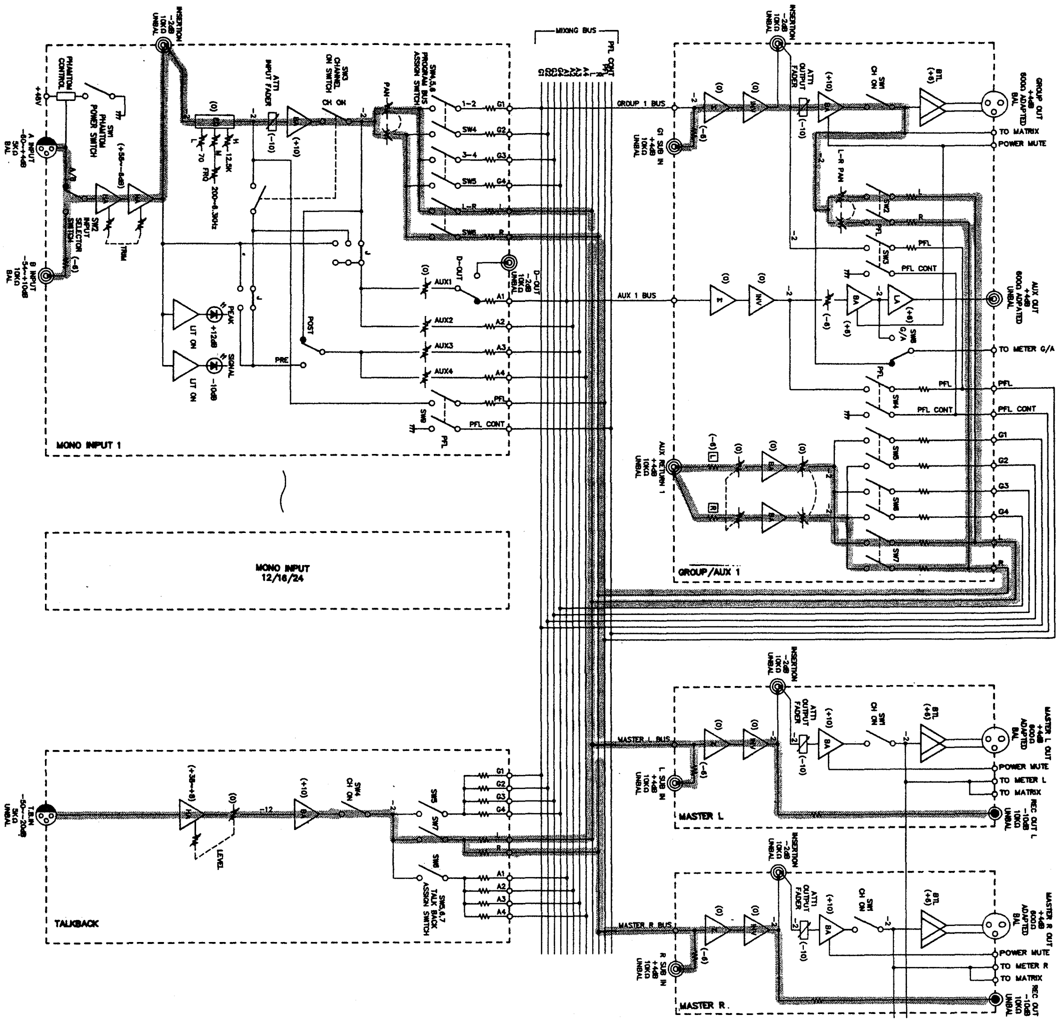
Program Bus Assign Switch 1-4: At OFF position .
Program Bus Assign Switch L/R: At ON position

■ **Master L/R Section**

Master fader:	At "0" on scale
Channel ON Switch:	At ON position
Headphones Level control:	At "10" on scale

- Check that the output levels at Phones L/R out is 160 mW with 400 ohms load.

10. A INPUT→REC OUT L/R
B INPUT→REC OUT L/R
G1 SUB INPUT→REC OUT L/R
L/R SUB INPUT→REC OUT L/R
AUX RETURN INPUT→REC OUT L/R
T.B.INPUT→REC OUT L/R



Set the controls and switches on the Mono input section as follows.

- **Mono Input Section**

Input fader:	At "0" on scale
Channel ON Switch:	At ON position
PAN control:	At center position
Program Bus Assign Switch L/R:	At ON position

- Check that the output levels at REC out is −10 dBV with 10 kohms load.

* 0 dB is referenced to 1 Vrms.

Set the controls and switches on the Group/AUX section as follows.

- **Group/AUX Section**

Group fader:	At "0" on scale
Channel ON Switch:	At ON position
PAN control:	At center position
Program Bus Assign Switch L/R:	At ON position

- Input the signal set at 1 kHz, +4 dB with 10 kohms load to GI Sub input.
- Check that the output level at REC OUT L/R is −10 dBV with 10 kohms load.
- Input the signal set at 1 kHz, +4 dB with 10 kohms load to L/R SUB INPUT.
- Check that the output level at REC OUT L/R is −10 dBV with 10 kohms load.

Set the controls and switches on the GROUP/AUX section as follows.

- **Group/AUX Section**

AUX Return Input control:	At "10" on scale
Balance control:	At center position
Program Bus Assign Switch L/R:	At ON position

- Input the signal set at 1 kHz,+4 dB to AUX RETURN INPUT.
- Check that the output level at REC OUT L/R is −10 dBV with 10 kohms load.

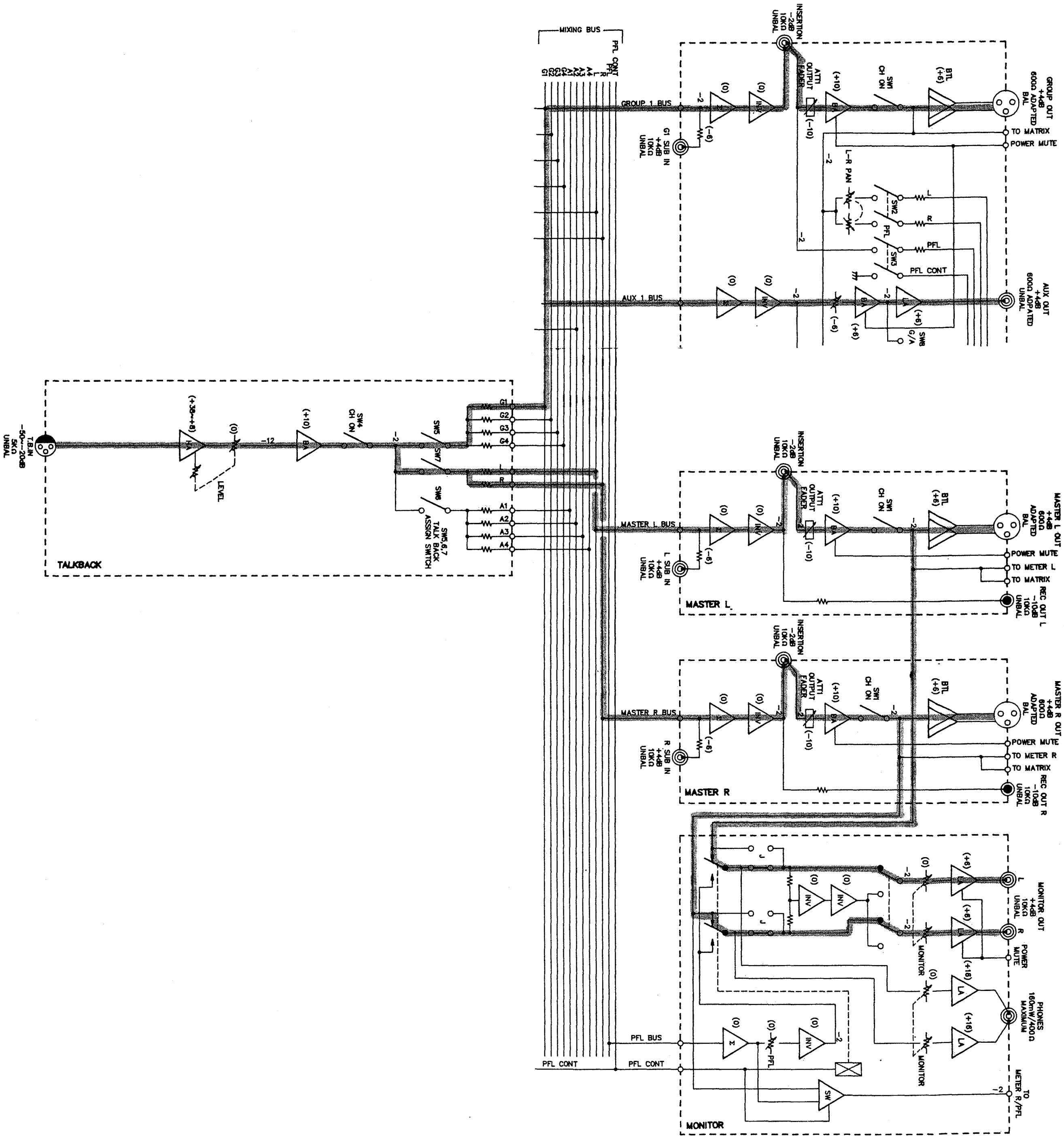
Set the control and switch on the Talkback section as follows.

- **Talkback Section**

Talkback Level control:	At "10" on scale
Channel ON Switch:	At ON position

- Input the signal set at 1 kHz, −50 dB.
- Check that the output level at REC OUT L/R is −10 dB with 10 kohms load.

11. T.B.MIC INPUT→GROUP OUTPUT
T.B.MIC INPUT→MASTER OUT L/R
T.B.MIC INPUT→PHONES OUTPUT
T.B.MIC INPUT→MONITOR OUTPUT
T.B.MIC INPUT→AUX OUTPUT


MIXING BUS
GROUP 1 BUS
TO MATRIX
POWER MUTE
AUX 1 BUS
TALKBACK
MASTER L BUS
POWER MUTE
TO METER L
TO MATRIX
MASTER L
MASTER R BUS
POWER MUTE
TO METER R
TO MATRIX
MASTER R
PFL BUS
PFL CONT
PFL CONT
MONITOR

TALKBACK Section		
Control/Switch	Setting	Input level
SW4(T.B.)	ON	1 kHz −50 dB
Talkback Level control	At "10" on scale	

Set the controls and switches on the Talkback section and Group /AUX section as follows.

- **Talkback section**
  Talkback Assign Switch G1-G4: At ON position
- **Group/AUX Section**
  Group fader: At "0" on scale
  Channel ON Switch: At ON position
- Check that the output levels at Group out are +4 dB with 600 ohms load.

Set the controls and switches on the Talkback section and Master L/R section as follows.

- **Talkback Section**
  Talkback Assign Switch L/R: At ON position
- **Master L/R Section**
  Master fader: At "0" on scale
  Channel ON Switch: At ON position
- Check that the output levels at Master out L/R are +4 dB with 600 ohms load.

Set the controls and switches on the Talkback section, Master L/R section and Monitor section as follows.

- **Talkback Section**
  Talkback Assign Switch L/R: At ON position
- **Master L/R Section**
  Master fader: At "0" on scale
  Channel ON Switch: At ON position
- **Monitor Section**
  Headphones Level control: At "10" on scale
- Check that the output levels at Phones out L/R are 160 mW with 400 ohms load.

Set the controls and switches on the Talkback section, Master L/R section and Monitor section as follows.

- **Talkback Section**
  Talkback Assign Switch L/R: At ON position
- **Master L/R Section**
  Master fader: At "0" on scale
  Channel ON Switch: At ON position
- **Monitor Section**
  Mono Monitor Switch: At STEREO position
  Monitor Master Level Control: At "10" on scale
- Check that the output levels at Monitor out L/R are +4 dB with 10 kohms load.

Set the controls and switches on the Talkback section and Group/AUX section as follows.

- **Talkback Section**
  Talkback Assign Switch A1-A4: At ON position
- **Group/AUX Section**
  AUX 1-4 controls: At nominal position
- Check that the output levels at AUX out +4 dB with 600 ohms load.

DISASSEMBLY

Rear Panel & Side Pad Removal for WR-S4424

- Remove eight screws ① holding the side pads (A), (B); (1), (2) on the left and right.
- Remove five screws ② holding the rear panel (3) then remove the rear panel from the back sash.
  Then, remove two types of each screws ③, ④ holding the back sash then remove the back sash from the main unit.

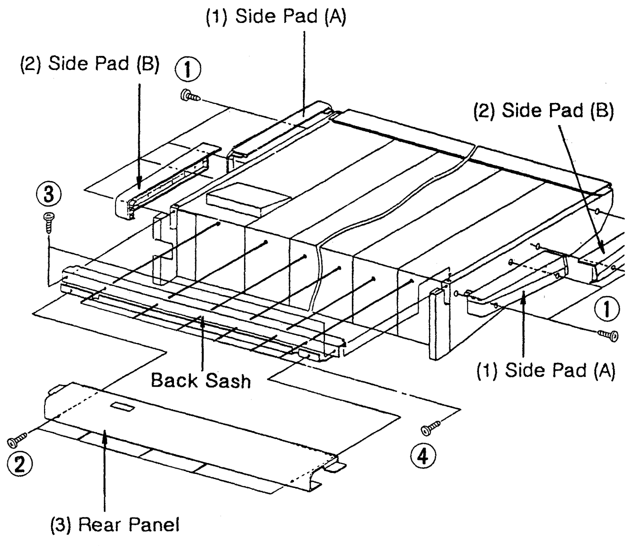

(1) Side Pad (A)
(2) Side Pad (B)
①
(2) Side Pad (B)
③
①
(1) Side Pad (A)
Back Sash
④
②
(3) Rear Panel

Fig. 1

Input/Output Sections & Palm Rest Removal for WR-S4424

- Remove seven screws ⑤ holding the palm rest (4) then remove the palm rest from the main unit.
- Remove the bus cable (5) from each board.
- Remove four screws ⑥ holding the output section (6) then lift up the output section to remove the whole assembly.

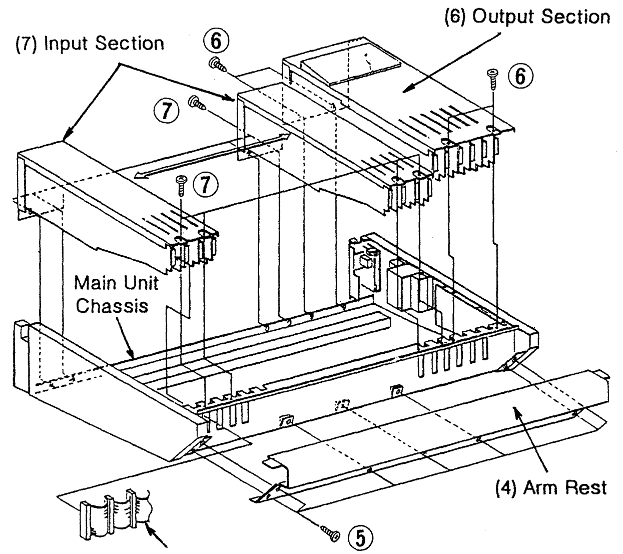

(6) Output Section
(7) Input Section
⑥
⑥
⑦
⑦
Main Unit Chassis
(4) Arm Rest
⑤
(5) Flat Bus Cable

Fig. 2

- To remove input modules, remove four screws ⑦ per module, then lift the module out of the chassis.

Power Unit Removal

- Remove two screws ⑧ holding the power supply panel assembly (8) then remove the assembly.
- Remove four screws ⑨ holding the right side panel (9) then remove the power supply secondary board (11).
- Then, disconnect each connector and remove each lead. (Fig. 3)

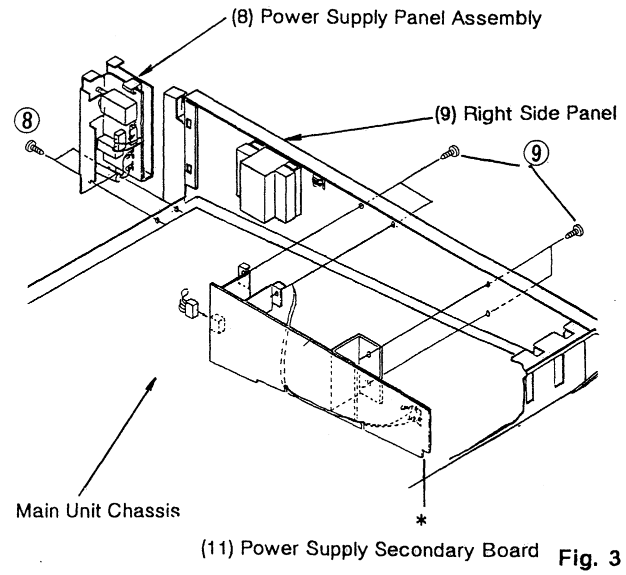

(8) Power Supply Panel Assembly
⑧
(9) Right Side Panel
⑨
Main Unit Chassis
*
(11) Power Supply Secondary Board

Fig. 3

* On assembly, the front end of the board should be inserted in the cut off portion of the main unit chassis.

Disassembling the Main Unit

- Remove two screws ⑩ from each rubber foot 12.
- Remove six screws ⑪ holding each the left and right side panel (9), (10).

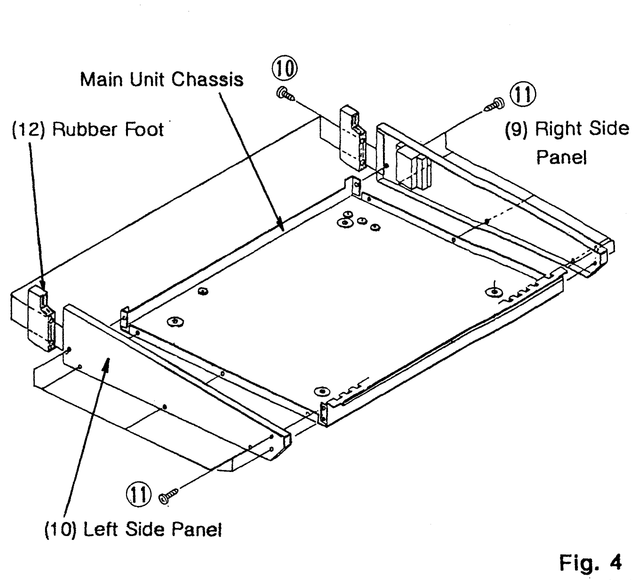

Main Unit Chassis
⑩
⑪
(12) Rubber Foot
(9) Right Side Panel
⑪
(10) Left Side Panel

Fig. 4

Power Transformer Removal

- Remove four screws ⑫ holding the power transformer then remove the power transformer.

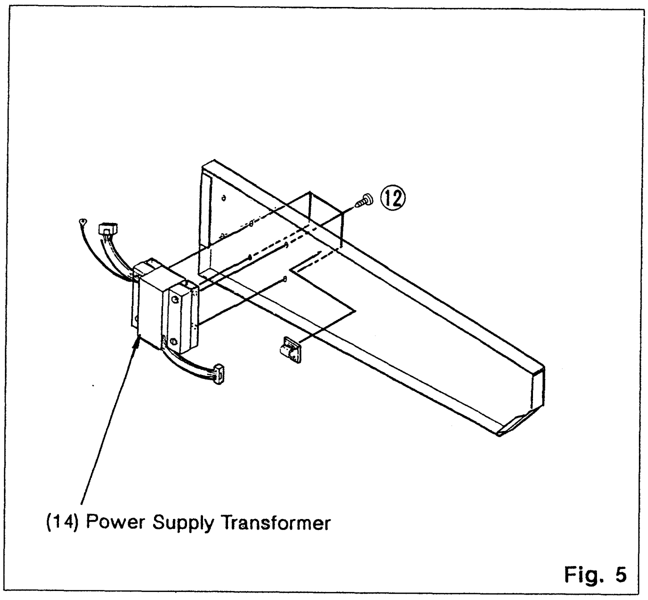

⑫
(14) Power Supply Transformer

Fig. 5

Power Supply Panel Assembly Removal

- Pull out the power switch knob 13 and the power switch guard 14.
- Remove two screws ⑬ holding each the power supply switch 15 and the power supply primary board assembly. Then pull out the board.

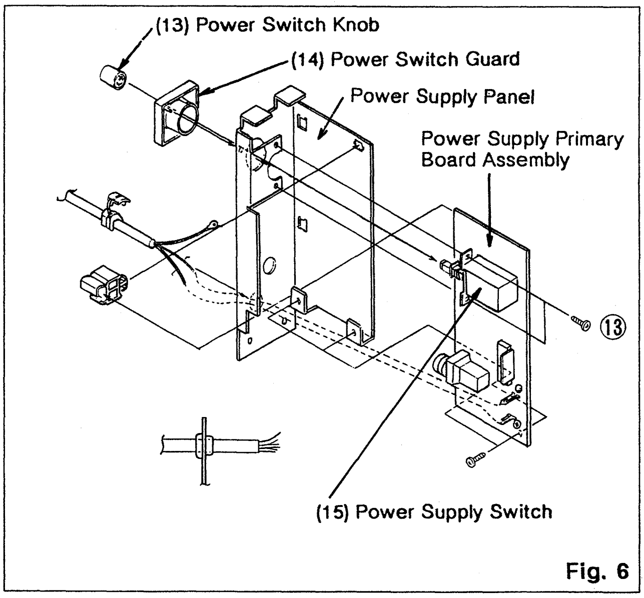

(13) Power Switch Knob
(14) Power Switch Guard
Power Supply Panel
Power Supply Primary Board Assembly
⑬
(15) Power Supply Switch

Fig. 6

Meter Panel Assembly Removal

- Remove two screws ⑭ holding the meter panel assembly (14) then slide in direction of the arrow.

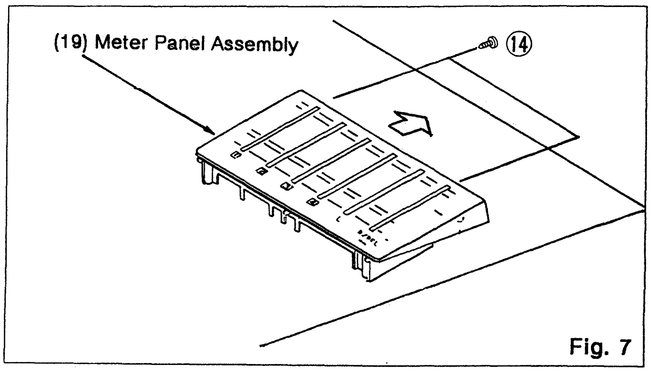

(19) Meter Panel Assembly
⑭

Fig. 7

ADJUSTMENT

LED BARGRAPH METER ADJUSTMENT

Adjustment Preparation

Remove the two screws on rear of meter panel (see Meter Panel Assembly Removal, page 20, fig. 7).
Set the meter panel on top of its opening so that the adjustment trimpots are exposed. Be sure that the circuit board does not contact any metal points on the chassis.

Adjustment Procedure

1. Apply a +4 dBu, 1 kHz sine wave to any input channel.
2. Set controls as follows:
   Input Channel section
   Input level - minimum (fully counterclockwise)
   EQ - flat(center detent position)
   Assign switches 1/2, 3/4, L/R -.on
   Fader - flat(center detant position)
   Channel On switch - on
   Pan control - center detent
   PFL switch - off

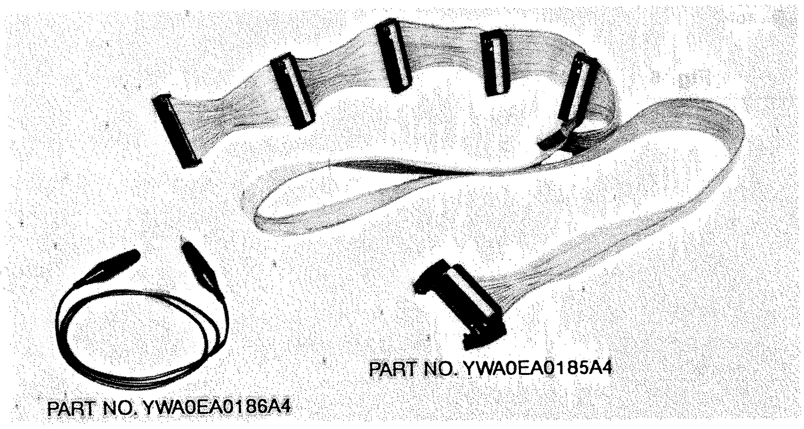
   Group/Aux Output Section
   G1 - G4, L & R Faders - "0" position
   ON switches - on
   L-R switches - off
   Pan controls - center detent
   PFL switches - off
   Meter select switches - out (G1 - G4)
3. Readjust the Input Level control so that all meters are reading approximately "0".
4. Measure each output, G1 - G4, L and R. Adjust each respective fader so that all outputs are exactly +4 dBu with 10K ohms termination.
5. Adjust VR1 so that the green LED at the "0" point of the G1 meter just becomes brightly lit.
6. Adjust the remaining meters the same way (VR2 for G2, VR3 for G3, VR4 for G4, VR5 for L, VR6 for R).

NOTE:
Use an insulated screwdriver to prevent false readings.

Extension Cable

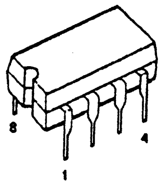
A. Extension cable is available for testing modules outside of the mainframe.

- The extension cable (YWA0EA0186A4, YWA0EA0185A4) consists of connection boards and extension cables, which facilitates troubleshooting in the event of a problem with any of the modules.

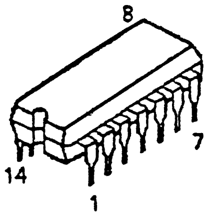


APPEARANCE OF IC TRANSISTOR AND DIODE

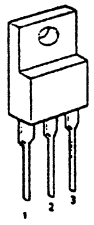
- YWNJM2068DD
- YWNJM4556DD
- YWNJM4558DD



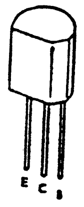
- YWUPD6360C



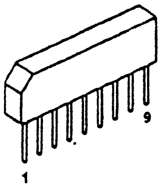
- YWNJM7812FA
- 2SD1276A-QR
- 2SB943-PQ
- 2SD1268-PQ



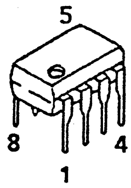
- 2SC1844-FE
- 2SC1684-QR
- 2SA564-RS
- 2SC1318-RS



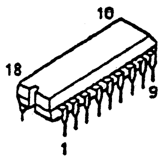
- YWTA7317P



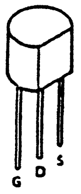
- YWM5201P



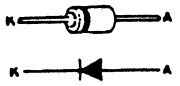
- AN6891



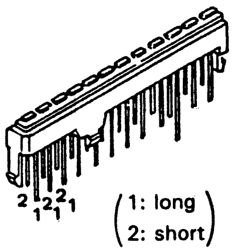
- 2SK301-R



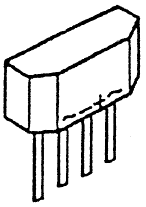
- MA165
- MA167
- YWHZS16EB2
- YWAM01Z
- YWHZS27EB2



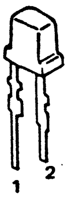
- LN121185P


2
1
2
1
2
1
1: long
2: short

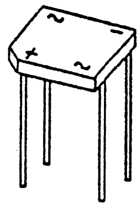
- YWRB152F



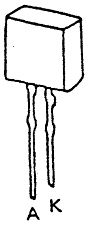
- LN021582PH



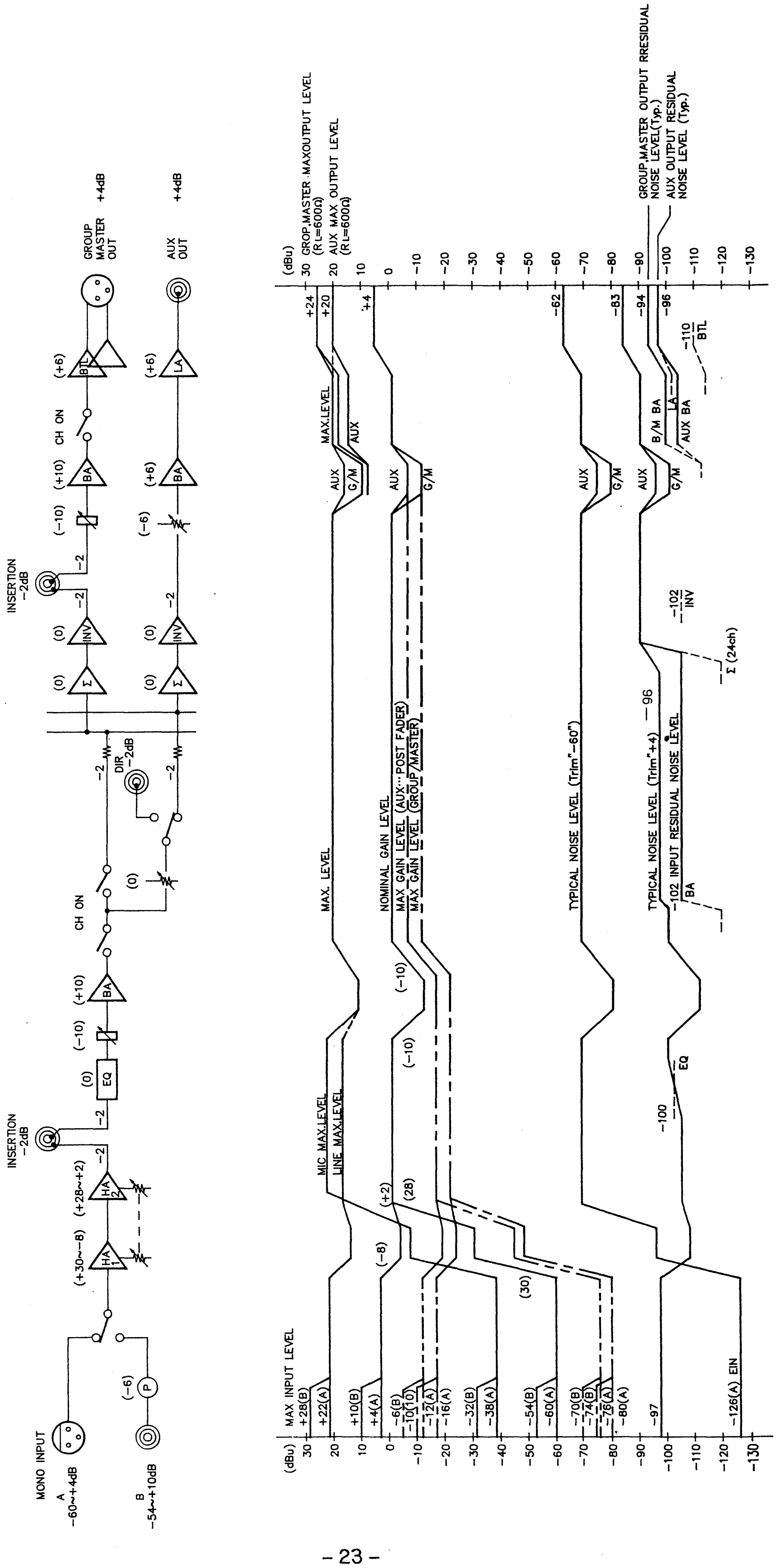
- YWRB402F



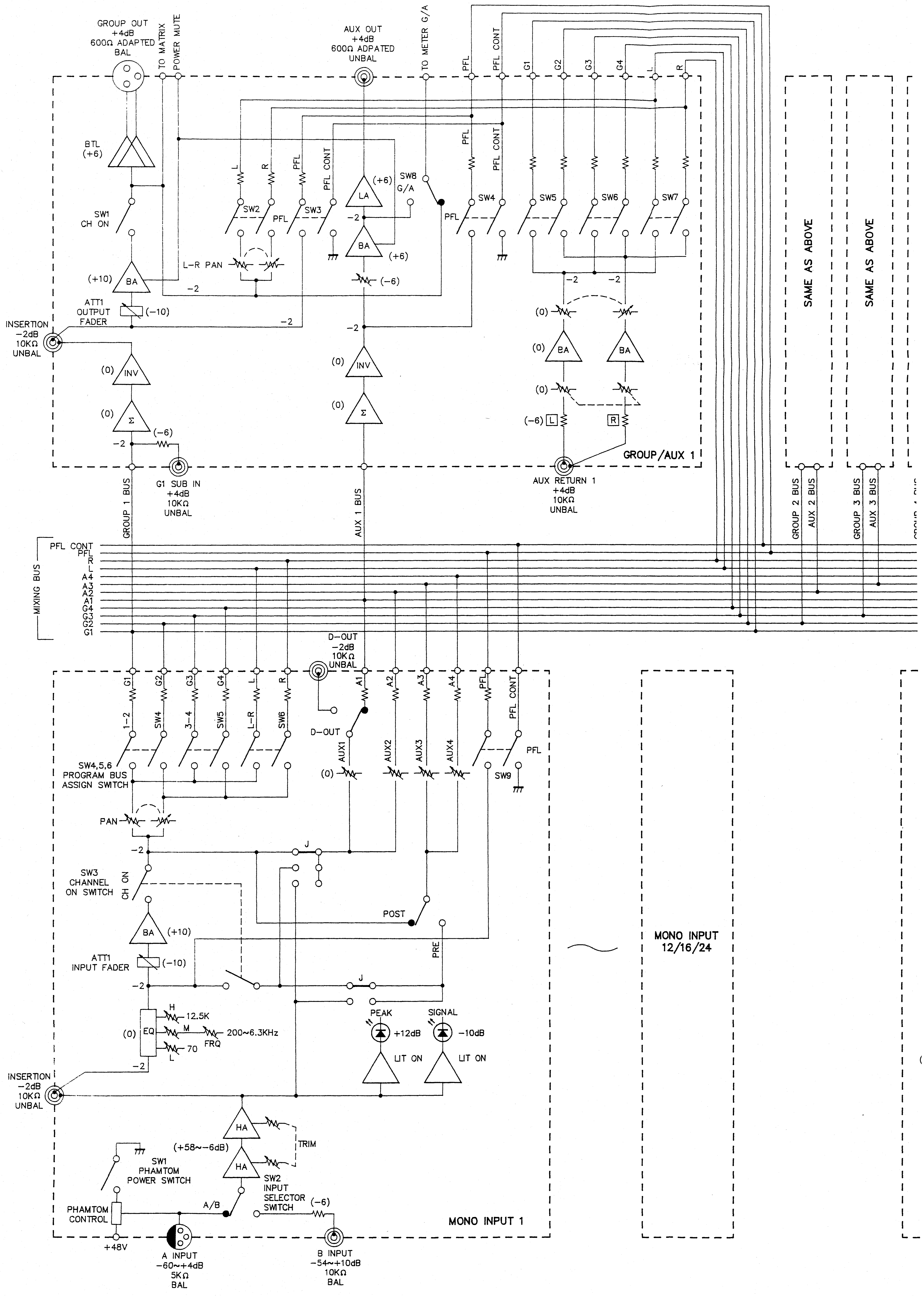
- LN220RP



LEVEL DIAGRAM

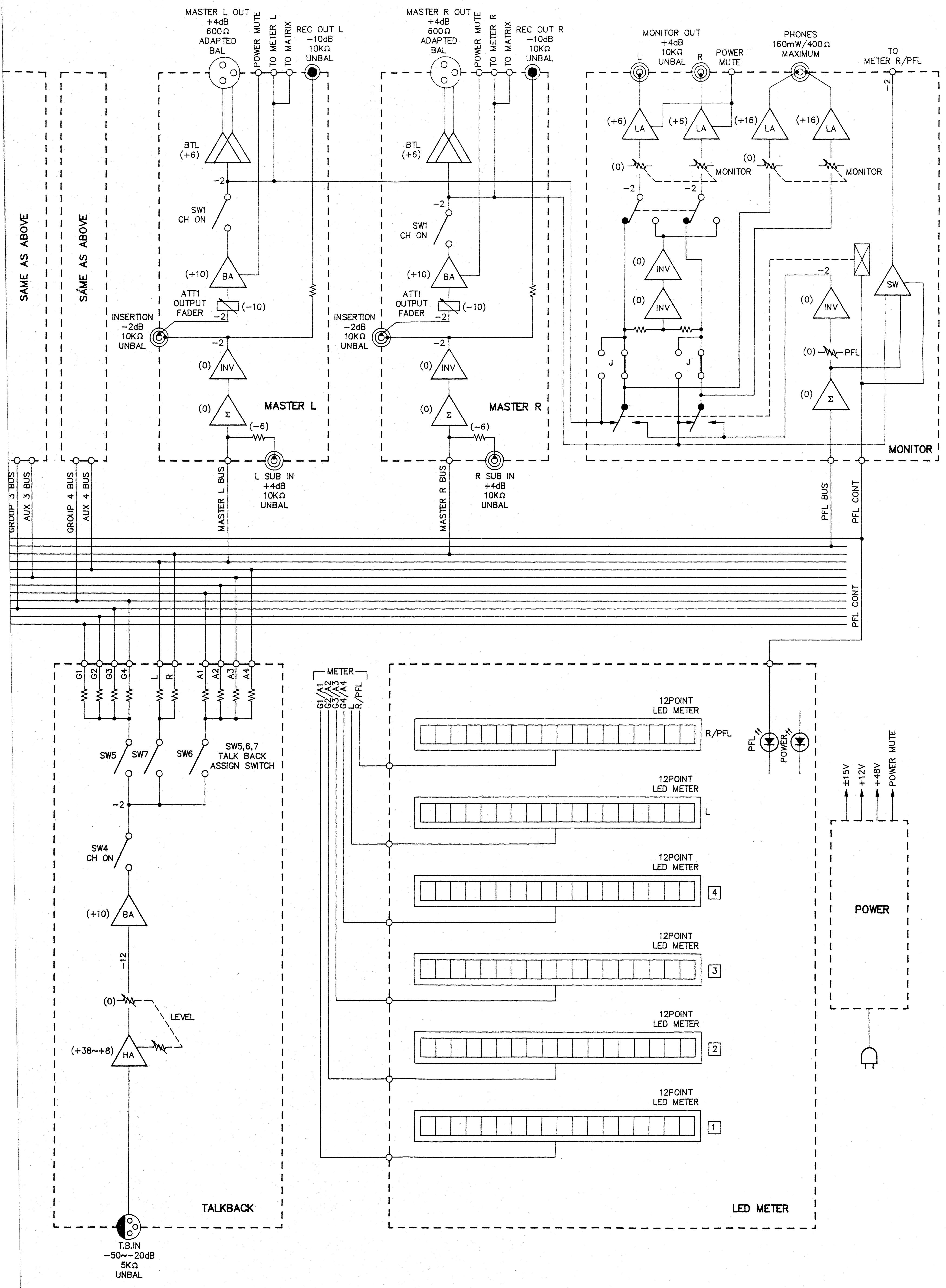

MONO INPUT
A
−60~+4dB
B
−54~+10dB
(−6)
P
HA 1
HA 2
(+30~−8)
(+28~+2)
INSERTION
−2dB
EQ
(0)
(−10)
BA
(+10)
CH ON
DIR
−2dB
Σ
INV
(+6)
BTL
LA
GROUP MASTER OUT
+4dB
AUX OUT
+4dB
(dBu)
MAX INPUT LEVEL
MIC MAX.LEVEL
LINE MAX.LEVEL
MAX. LEVEL
NOMINAL GAIN LEVEL
MAX GAIN LEVEL (AUX···POST FADER)
MAX GAIN LEVEL (GROUP MASTER)
TYPICAL NOISE LEVEL (Trim"−60")
TYPICAL NOISE LEVEL (Trim"+4)
−102 INPUT RESIDUAL NOISE LEVEL
Σ (24ch)
GROP.MASTER MAXOUTPUT LEVEL (RL=600Ω)
AUX MAX OUTPUT LEVEL (RL=600Ω)
GROUP.MASTER OUTPUT RRESIDUAL NOISE LEVEL(Typ.)
AUX OUTPUT RESIDUAL NOISE LEVEL (Typ.)
+28(B)
+22(A)
+10(B)
+4(A)
−6(B)
−10(10)
−12(A)
−16(A)
−32(B)
−38(A)
−54(B)
−60(A)
−70(B)
−74(B)
−76(A)
−80(A)
−97
−126(A) EIN
+24
+20
+4
−62
−83
−94
−96
−110
−100
−102
INV
AUX
G/M
B/M BA
AUX BA
(+2)
(28)
(−8)
(30)
(−10)
EQ
BA

BLOCK DIAGR

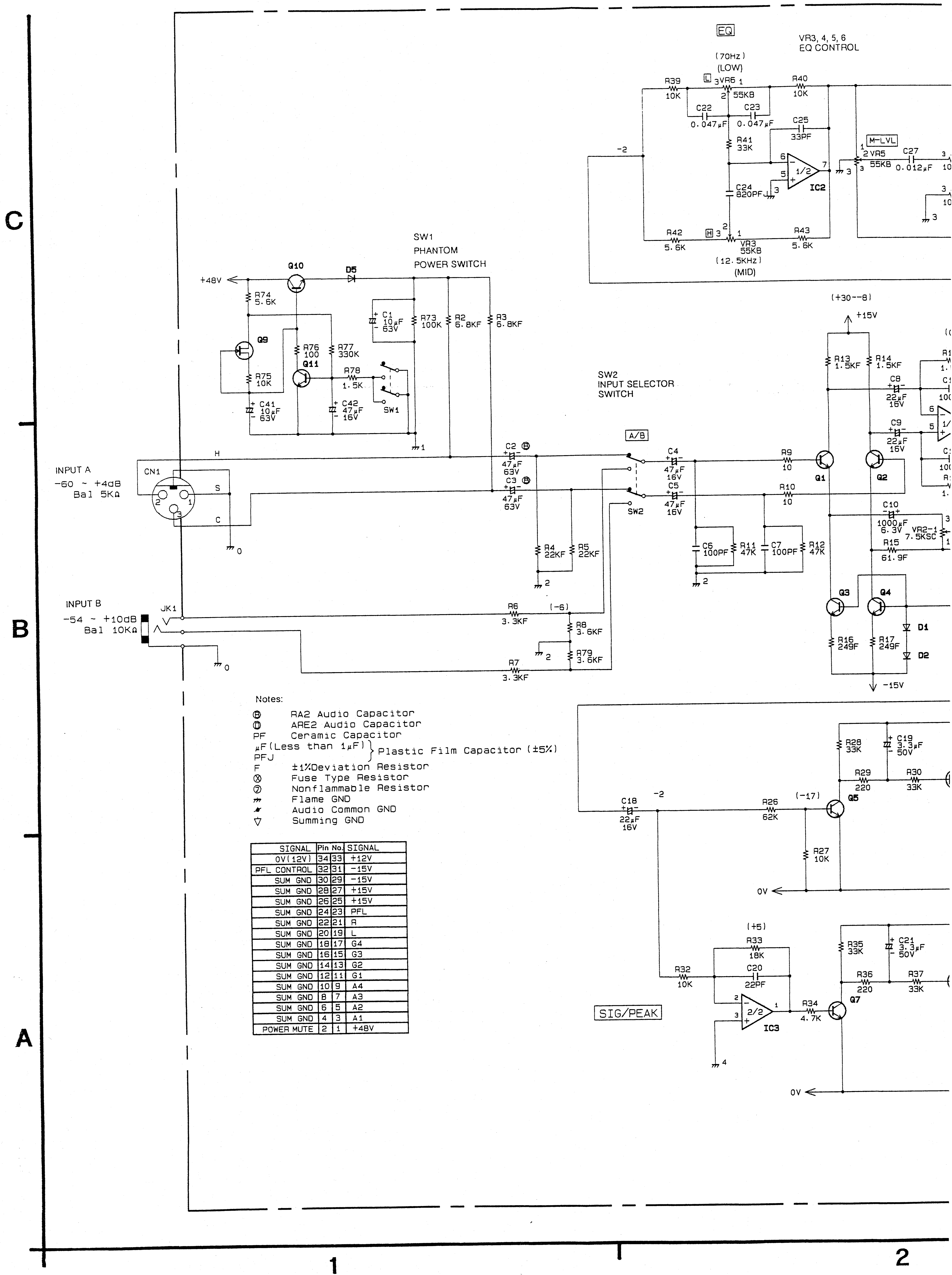


GROUP OUT
+4dB
600Ω ADAPTED
BAL
TO MATRIX
POWER MUTE
AUX OUT
+4dB
600Ω ADPATED
UNBAL
TO METER G/A
PFL
PFL CONT
G1
G2
G3
G4
L
R
BTL
(+6)
SW1
CH ON
(+10)
BA
ATT1
OUTPUT
FADER
(−10)
INSERTION
−2dB
10KΩ
UNBAL
(0)
INV
Σ
(−6)
−2
G1 SUB IN
+4dB
10KΩ
UNBAL
SW2
PFL
SW3
L-R PAN
LA
(+6)
SW8
G/A
BA
(+6)
(−6)
SW4
SW5
SW6
SW7
(0)
(−6)
L
R
GROUP/AUX 1
AUX RETURN 1
+4dB
10KΩ
UNBAL
SAME AS ABOVE
SAME AS ABOVE
GROUP 1 BUS
AUX 1 BUS
GROUP 2 BUS
AUX 2 BUS
GROUP 3 BUS
AUX 3 BUS
MIXING BUS
PFL CONT
PFL
R
L
A4
A3
A2
A1
G4
G3
G2
G1
D-OUT
−2dB
10KΩ
UNBAL
A1
A2
A3
A4
1-2
SW4
3-4
SW5
L-R
SW6
D-OUT
AUX1
AUX2
AUX3
AUX4
PFL
SW9
SW4,5,6
PROGRAM BUS
ASSIGN SWITCH
PAN
J
SW3
CHANNEL
ON SWITCH
CH ON
POST
PRE
BA
(+10)
ATT1
INPUT FADER
(−10)
J
PEAK
+12dB
SIGNAL
−10dB
LIT ON
LIT ON
H
12.5K
M
200~6.3KHz
FRQ
EQ
70
L
INSERTION
−2dB
10KΩ
UNBAL
HA
TRIM
(+58~−6dB)
SW1
PHAMTOM
POWER SWITCH
SW2
INPUT
SELECTOR
SWITCH
(−6)
A/B
PHAMTOM
CONTROL
+48V
A INPUT
−60~+4dB
5KΩ
BAL
B INPUT
−54~+10dB
10KΩ
BAL
MONO INPUT 1
MONO INPUT
12/16/24

DIAGRAM


MASTER L OUT
+4dB
600Ω
ADAPTED
BAL
POWER MUTE
TO METER L
TO MATRIX
REC OUT L
−10dB
10KΩ
UNBAL
MASTER R OUT
+4dB
600Ω
ADAPTED
BAL
POWER MUTE
TO METER R
TO MATRIX
REC OUT R
−10dB
10KΩ
UNBAL
MONITOR OUT
+4dB
10KΩ
UNBAL
L
R
POWER MUTE
PHONES
160mW/400Ω
MAXIMUM
TO METER R/PFL
SAME AS ABOVE
SAME AS ABOVE
BTL
(+6)
SW1
CH ON
(+10)
BA
ATT1
OUTPUT
FADER
(−10)
INSERTION
−2dB
10KΩ
UNBAL
INV
Σ
(−6)
MASTER L
MASTER R
L SUB IN
+4dB
10KΩ
UNBAL
R SUB IN
+4dB
10KΩ
UNBAL
LA
(+6)
(+16)
(0)
MONITOR
J
SW
PFL
MONITOR
GROUP 3 BUS
AUX 3 BUS
GROUP 4 BUS
AUX 4 BUS
MASTER L BUS
MASTER R BUS
PFL BUS
PFL CONT
G1
G2
G3
G4
L
R
A1
A2
A3
A4
SW5
SW7
SW6
SW5,6,7
TALK BACK
ASSIGN SWITCH
SW4
CH ON
−2
−12
LEVEL
(+38~+8)
HA
TALKBACK
T.B.IN
−50~−20dB
5KΩ
UNBAL
METER
G1/A1
G2/A2
G3/A3
G4/A4
L
R/PFL
12POINT
LED METER
R/PFL
L
4
3
2
1
PFL
POWER
LED METER
±15V
+12V
+48V
POWER MUTE
POWER

SCHEMATIC DIAGRAM OF MC



C
B
A
1
2
EQ
VR3, 4, 5, 6
EQ CONTROL
(70Hz)
(LOW)
R39
10K
VR6
55KB
R40
10K
C22
0.047μF
C23
0.047μF
C25
33PF
R41
33K
-2
1/2
IC2
C24
820PF
R42
5.6K
VR3
55KB
(12.5KHz)
(MID)
R43
5.6K
M-LVL
VR5
55KB
C27
0.012μF
SW1
PHANTOM
POWER SWITCH
Q10
D5
+48V
R74
5.6K
Q9
C1
10μF
63V
R73
100K
R2
6.8KF
R3
6.8KF
R76
100
R77
330K
Q11
R78
1.5K
R75
10K
C41
10μF
63V
C42
47μF
16V
SW1
SW2
INPUT SELECTOR
SWITCH
A/B
INPUT A
-60 ~ +4dB
Bal 5KΩ
CN1
H
S
C
C2
47μF
63V
C3
47μF
63V
C4
47μF
16V
C5
47μF
16V
SW2
R9
10
R10
10
Q1
Q2
R4
22KF
R5
22KF
C6
100PF
R11
47K
C7
100PF
R12
47K
(+30--8)
+15V
R13
1.5KF
R14
1.5KF
C8
22μF
16V
C9
22μF
16V
C10
1000μF
6.3V
VR2-1
7.5KSC
R15
61.9F
INPUT B
-54 ~ +10dB
Bal 10KΩ
JK1
R6
3.3KF
(-6)
R8
3.6KF
R79
3.6KF
R7
3.3KF
Q3
Q4
R16
249F
R17
249F
D1
D2
-15V
R28
33K
C19
3.3μF
50V
R29
220
R30
33K
C18
22μF
16V
-2
R26
62K
(-17)
Q5
R27
10K
0V
(+5)
R33
18K
R32
10K
C20
22PF
R34
4.7K
2/2
IC3
Q7
R35
33K
C21
3.3μF
50V
R36
220
R37
33K
SIG/PEAK
0V

Notes:

Ⓑ	RA2 Audio Capacitor
Ⓓ	ARE2 Audio Capacitor
PF	Ceramic Capacitor
μF(Less than 1μF) PFJ	Plastic Film Capacitor (±5%)
F	±1%Deviation Resistor
⊗	Fuse Type Resistor
⑦	Nonflammable Resistor
⏚	Flame GND
⏚	Audio Common GND
▽	Summing GND

SIGNAL	Pin No.		SIGNAL
0V(12V)	34	33	+12V
PFL CONTROL	32	31	-15V
SUM GND	30	29	-15V
SUM GND	28	27	+15V
SUM GND	26	25	+15V
SUM GND	24	23	PFL
SUM GND	22	21	R
SUM GND	20	19	L
SUM GND	18	17	G4
SUM GND	16	15	G3
SUM GND	14	13	G2
SUM GND	12	11	G1
SUM GND	10	9	A4
SUM GND	8	7	A3
SUM GND	6	5	A2
SUM GND	4	3	A1
POWER MUTE	2	1	+48V

<Grid Key>

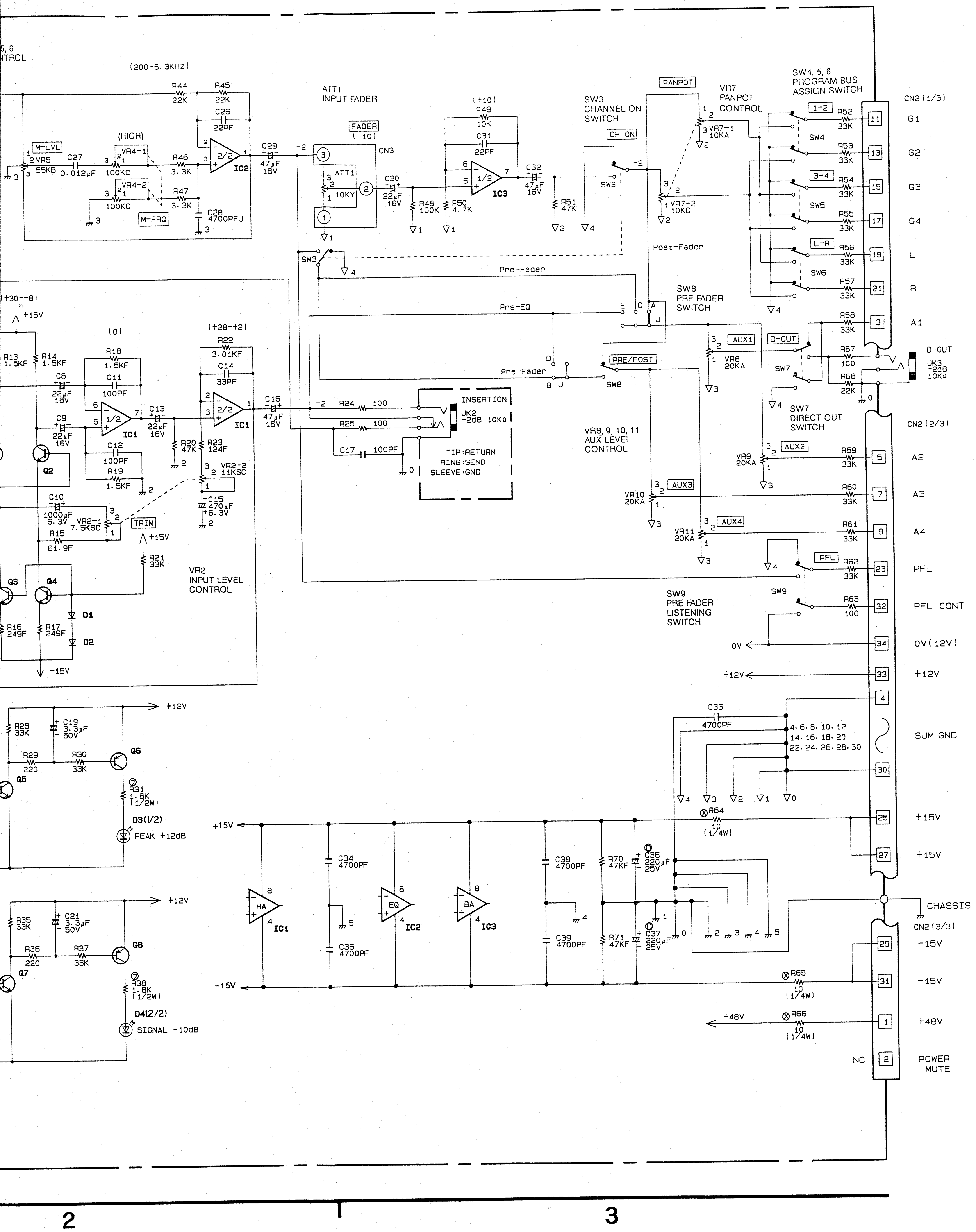
IC1	C2, A3	Q5	B2
IC2	D2, A3	Q6	B2
IC3	D3, A3	Q7	B1
Q1	C2	Q8	B1
Q2	C2	Q9	C1
Q3	B2	Q10	C1
Q4	B2	Q11	C1

Switch No.	FUNCTION
SW1	Phantom Power SW
SW2	Input selector SW
SW3	Channel ON SW

SW4-6	Program bus assign SW
SW7	Direct out SW
SW8	Pre fader SW
SW9	Pre fader listening SW

Volume No.	FUNCTION
VR2	Input Level Control
VR3-6	EQ Control
VR7	Panpot Control
VR8-11	AUX Level Control

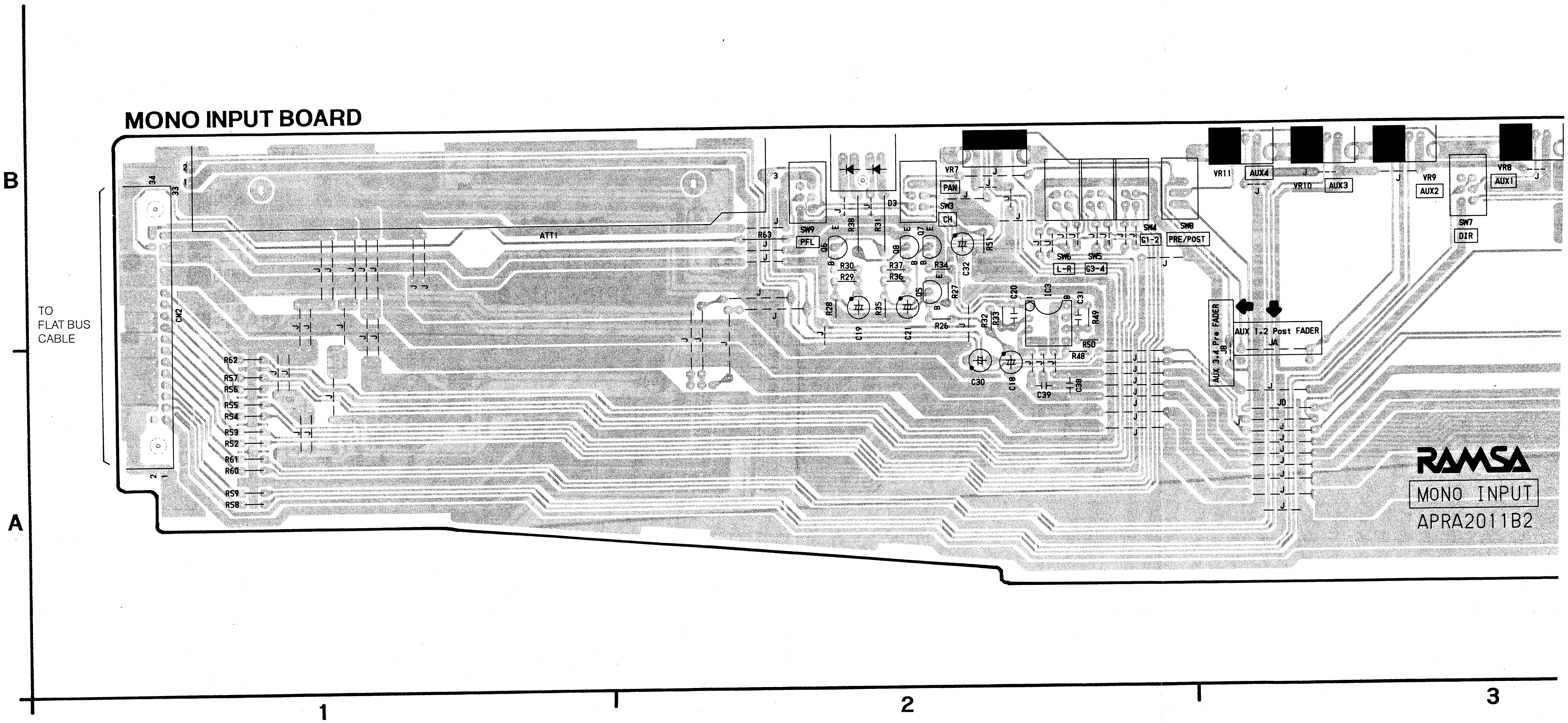
GRAM OF MONO INPUT



5, 6
NTROL
(200-6.3KHz)
R44 22K
R45 22K
C26 22PF
M-LVL
VR5 55KB
C27 0.012μF
(HIGH)
VR4-1 100KC
VR4-2 100KC
R46 3.3K
R47 3.3K
M-FRQ
C28 4700PFJ
IC2 2/2
C29 47μF 16V
ATT1
INPUT FADER
FADER (-10)
CN3
ATT1 10KY
C30 22μF 16V
R48 100K
R50 4.7K
(+10)
R49 10K
C31 22PF
IC3 1/2
C32 47μF 16V
R51 47K
SW3
CHANNEL ON SWITCH
CH ON
PANPOT
VR7
PANPOT CONTROL
VR7-1 10KA
VR7-2 10KC
SW4, 5, 6
PROGRAM BUS ASSIGN SWITCH
1-2
3-4
L-R
SW4
SW5
SW6
R52 33K
R53 33K
R54 33K
R55 33K
R56 33K
R57 33K
CN2 (1/3)
G1
G2
G3
G4
L
R
Post-Fader
Pre-Fader
Pre-EQ
SW8
PRE FADER SWITCH
PRE/POST
A1
R58 33K
AUX1
VR8 20KA
D-OUT
SW7
DIRECT OUT SWITCH
R67 100
R68 22K
D-OUT
JK3 -2dB 10KΩ
(+30--8)
+15V
(0)
(+28-+2)
R13 1.5KF
R14 1.5KF
R18 1.5KF
C8 22μF 16V
C11 100PF
IC1 1/2
C9 22μF 16V
C12 100PF
R19 1.5KF
Q2
C13 22μF 16V
R22 3.01KF
C14 33PF
IC1 2/2
R20 47K
R23 124F
VR2-2 11KSC
C15 470μF 6.3V
C16 47μF 16V
R24 100
R25 100
C17 100PF
INSERTION
JK2 -2dB 10KΩ
TIP:RETURN
RING:SEND
SLEEVE:GND
C10 1000μF 6.3V
VR2-1 7.5KSC
TRIM
R15 61.9F
R21 33K
VR2
INPUT LEVEL CONTROL
Q3
Q4
D1
D2
R16 249F
R17 249F
-15V
VR8, 9, 10, 11
AUX LEVEL CONTROL
AUX2
VR9 20KA
R59 33K
CN2 (2/3)
A2
AUX3
VR10 20KA
R60 33K
A3
AUX4
VR11 20KA
R61 33K
A4
PFL
R62 33K
PFL
SW9
PRE FADER LISTENING SWITCH
R63 100
PFL CONT
0V
0V(12V)
+12V
C33 4700PF
4.6.8.10.12
14.16.18.20
22.24.26.28.30
SUM GND
+12V
R28 33K
C19 3.3μF 50V
R29 220
R30 33K
Q5
Q6
R31 1.8K (1/2W)
D3(1/2)
PEAK +12dB
R35 33K
C21 3.3μF 50V
R36 220
R37 33K
Q7
Q8
R38 1.8K (1/2W)
D4(2/2)
SIGNAL -10dB
+15V
R64 (1/4W)
C34 4700PF
C35 4700PF
HA IC1
EQ IC2
BA IC3
C38 4700PF
C39 4700PF
R70 47KF
R71 47KF
C36 220μF 25V
C37 220μF 25V
CHASSIS
CN2 (3/3)
-15V
R65 10 (1/4W)
+48V
R66 10 (1/4W)
NC
POWER MUTE
2
3

NCTION
el Control
ol
ontrol
el Control

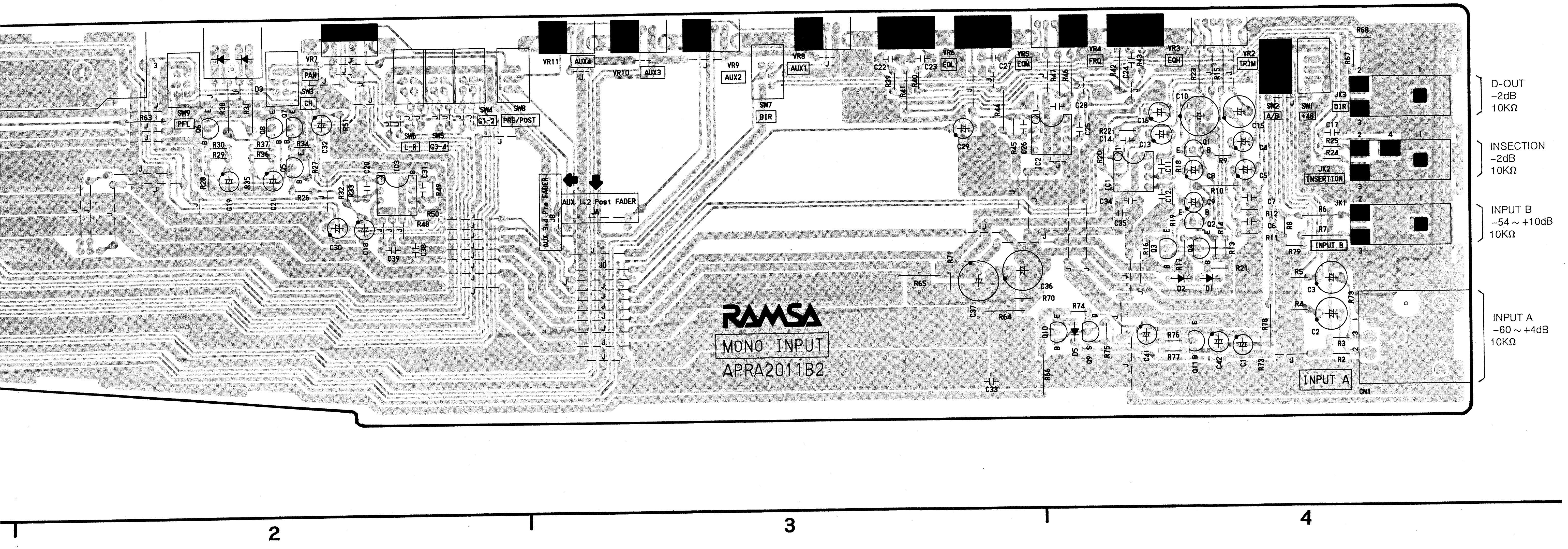
CONDUCTOR VIEW OF MONO INPUT


MONO INPUT BOARD
B
A
TO
FLAT BUS
CABLE
1
2
3
34
33
2
1
CN2
ATT1
R62
R57
R56
R55
R54
R53
R52
R61
R60
R59
R58
R63
SW9
PFL
VR7
PAN
SW3
CH
D3
R38
R31
Q6
Q8
Q7
R30
R29
R37
R36
R34
R28
R35
C19
C21
Q5
R27
C32
R51
R26
R32
R33
C20
IC3
C31
R49
R50
R48
C30
C18
C39
C38
SW6
L-R
SW5
G3-4
SW4
G1-2
SW8
PRE/POST
VR11
AUX4
VR10
AUX3
VR9
AUX2
VR8
AUX1
SW7
DIR
AUX 3.4 Pre FADER
JB
AUX 1.2 Post FADER
JA
JD
RAMSA
MONO INPUT
APRA2011B2

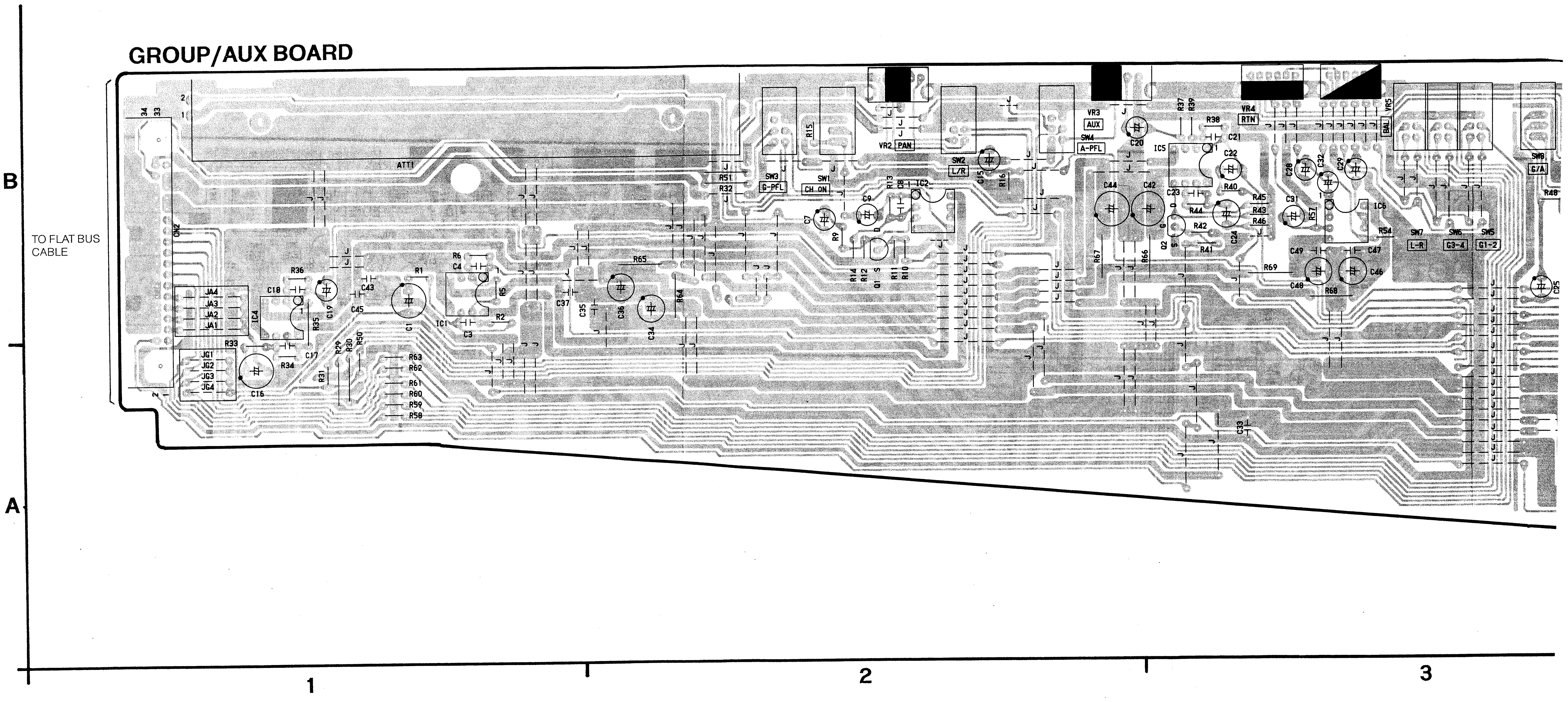
<Grid Key>

IC1	A4	Q7	B2
IC2	B3	Q8	B2
IC3	B2	Q9	A3
Q1	B4	Q10	A3
Q2	A4	Q11	A4
Q3	A4	D1	A4
Q4	A4	D2	B4
Q5	B2	D3	B2
Q6	B2	D4	B2
		D5	A3

CONDUCTOR VIEW OF MONO INPUT


D-OUT
-2dB
10KΩ
INSECTION
-2dB
10KΩ
INPUT B
-54 ~ +10dB
10KΩ
INPUT A
-60 ~ +4dB
10KΩ
RAMSA
MONO INPUT
APRA2011B2
JK3 DIR
JK2 INSERTION
JK1 INPUT B
CN1 INPUT A
SW1 +48
SW2 A/B
VR2 TRIM
VR3 EQH
VR4 FRQ
VR5 EQM
VR6 EQL
VR8 AUX1
VR9 AUX2
VR10 AUX3
VR11 AUX4
SW7 DIR
SW8 PRE/POST
SW4 G1-2
SW5 G3-4
SW6 L-R
SW3 CH
VR7 PAN
SW9 PFL
AUX 3.4 Pre FADER JB
AUX 1.2 Post FADER JA
JD
IC1
IC2
IC3
2
3
4

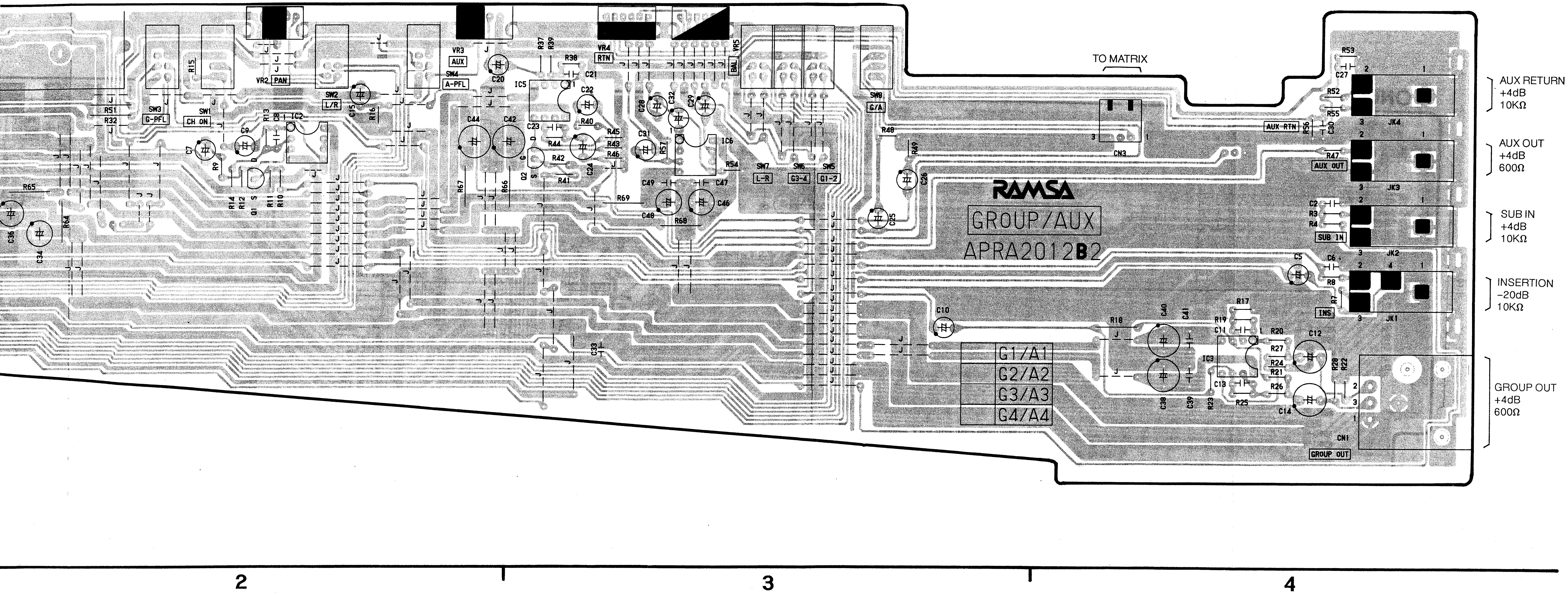
CONDUCTOR VIEW OF GROUP/AUX


GROUP/AUX BOARD
TO FLAT BUS CABLE
B
A
1
2
3
CN2
ATT1
JA4
JA3
JA2
JA1
JG1
JG2
JG3
JG4
IC4
IC1
IC2
IC5
IC6
Q1
Q2
C1
C3
C4
C7
C9
C15
C16
C17
C18
C19
C20
C21
C22
C23
C24
C25
C28
C29
C31
C32
C33
C34
C35
C36
C37
C42
C43
C44
C45
C46
C47
C48
C49
R1
R2
R5
R6
R9
R10
R11
R12
R13
R14
R15
R16
R29
R30
R31
R32
R33
R34
R35
R36
R37
R38
R39
R40
R41
R42
R43
R44
R45
R46
R48
R50
R51
R54
R57
R58
R59
R60
R61
R62
R63
R64
R65
R66
R67
R68
R69
VR2 PAN
VR3 AUX
VR4 RTN
VR5 BAL
SW1 CH ON
SW2 L/R
SW3 G-PFL
SW4 A-PFL
SW5 G1-2
SW6 G3-4
SW7 L-R
SW8 G/A

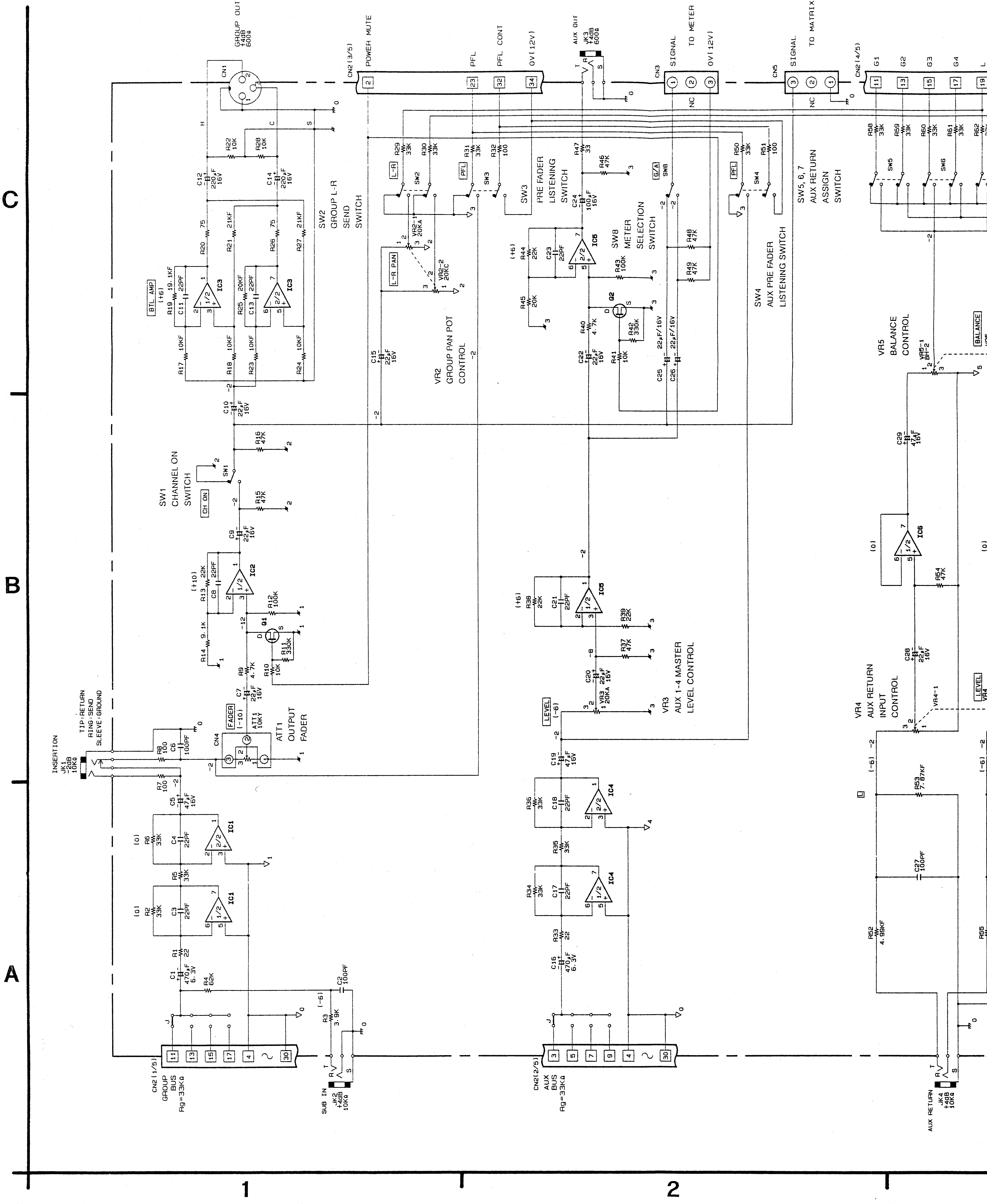
<Grid Key>

IC1	A1
IC2	B2
IC3	A4
IC4	A1
IC5	B2
IC6	B3
Q1	B2
Q2	B2

CONDUCTOR VIEW OF GROUP/AUX


TO MATRIX
AUX RETURN
+4dB
10KΩ
AUX OUT
+4dB
600Ω
SUB IN
+4dB
10KΩ
INSERTION
-20dB
10KΩ
GROUP OUT
+4dB
600Ω
RAMSA
GROUP/AUX
APRA2012B2
G1/A1
G2/A2
G3/A3
G4/A4
VR2 PAN
VR3 AUX
VR4 RTN
VR5 BAL
SW1 CH ON
SW2 L/R
SW3 G-PFL
SW4 A-PFL
SW5 G1-2
SW6 G3-4
SW7 L-R
SW8 G/A
IC2
IC3
IC5
IC6
CN1
CN3
JK1
JK2
JK3
JK4
AUX RTN
AUX OUT
SUB IN
INS
GROUP OUT
2
3
4

SCHEMATIC DIAGRAM OF GROUP/AU



GROUP OUT +4dB 600Ω
CN1
CN2(3/5)
POWER MUTE
PFL
PFL CONT
OV(12V)
AUX OUT JK3 +4dB 600Ω
CN3
SIGNAL
TO METER PWB
OV(12V)
CN5
SIGNAL
TO MATRIX
CN2(4/5)
G1
G2
G3
G4
SW2 GROUP L-R SEND SWITCH
SW3 PRE FADER LISTENING SWITCH
SW8 METER SELECTION SWITCH
SW4 AUX PRE FADER LISTENING SWITCH
SW5, 6, 7 AUX RETURN ASSIGN SWITCH
BTL AMP
VR2 GROUP PAN POT CONTROL
L-R PAN
VR5 BALANCE CONTROL
BALANCE
SW1 CHANNEL ON SWITCH
CH ON
IC1
IC2
IC3
IC4
IC5
IC6
Q1
Q2
INSERTION JK1 -6dB 10kΩ
TIP: RETURN RING: SEND SLEEVE: GROUND
FADER
ATT1 OUTPUT FADER
LEVEL
VR3 AUX 1-4 MASTER LEVEL CONTROL
VR4 AUX RETURN INPUT CONTROL
CN2(1/5) GROUP BUS Rg=33kΩ
SUB IN JK2 +4dB 10kΩ
CN2(2/5) AUX BUS Rg=33kΩ
AUX RETURN JK4 +4dB 10kΩ
A
B
C
1
2

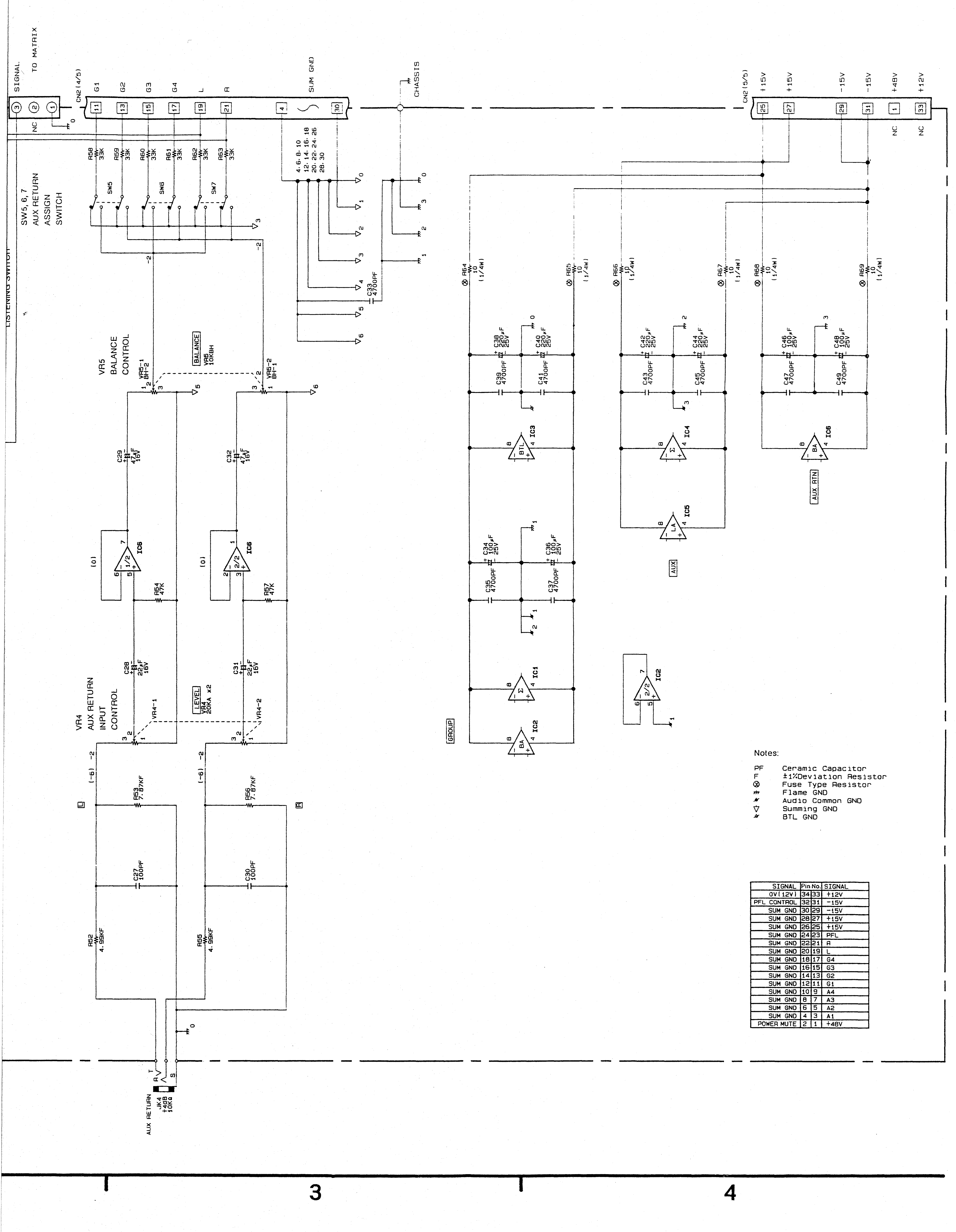
<Grid Key>

IC1	A1	B3	
IC2	B1	B3	
IC3	C1	B3	
IC4	A2	B4	
IC5	B2	C2	B4
IC6	B3	B4	
Q1	B1		
Q2	2C		

Switch No.	FUNCTION
SW1	Channel ON SW
SW2	Group L/R Send SW
SW3	Pre fader listening SW
SW4	AUX Pre fader listening SW
SW5-7	AUX return assign SW
SW5-7	Meter Selection SW

Volume No.	FUNCTION
VR2	Group pan pot control
VR3	AUX 1-4 Master Level Control
VR4	AUX return Input Control
VR5	Balance Control

GRAM OF GROUP/AUX

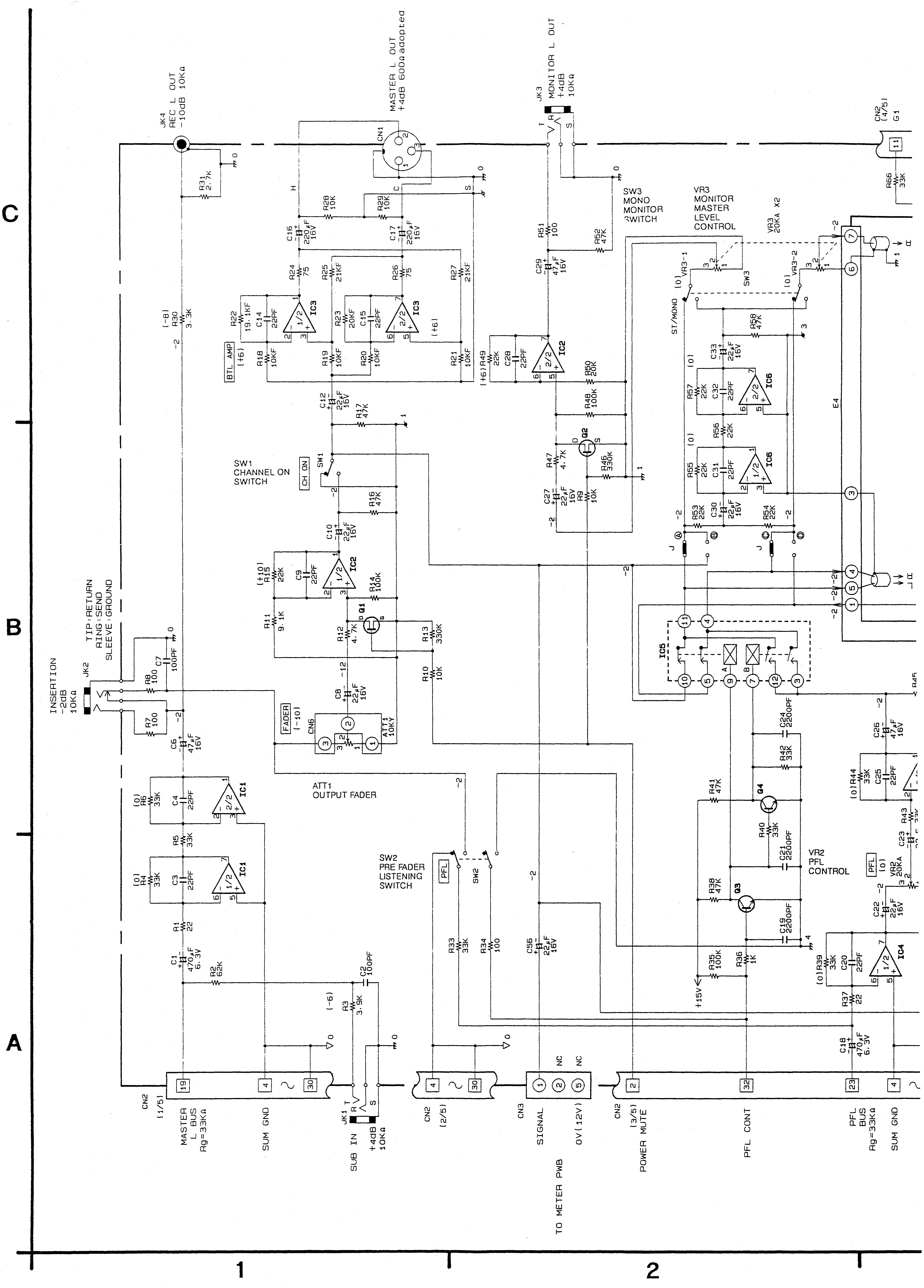

SIGNAL
TO MATRIX
NC
CN2 (4/5)
G1
G2
G3
G4
L
R
SUM GND
CHASSIS
CN2 (5/5)
+15V
+15V
-15V
-15V
+48V
+12V
NC
NC
SW5, 6, 7
AUX RETURN
ASSIGN
SWITCH
LISTENING SWITCH
R58 33K
R59 33K
R60 33K
R61 33K
R62 33K
R63 33K
SW5
SW6
SW7
4.6.8.10
12.14.16.18
20.22.24.26
28.30
C33 4700PF
VR5
BALANCE
CONTROL
BALANCE
VR5 10KBH
VR5-1 BH-2
VR5-2 BH-1
C29 47μF 16V
C32 47μF 16V
IC6
1/2
2/2
(0)
R54 47K
R57 47K
C28 22μF 16V
C31 22μF 16V
VR4
AUX RETURN
INPUT
CONTROL
LEVEL
VR4 20KA x2
VR4-1
VR4-2
(-6)
R53 7.87KF
R56 7.87KF
L
R
C27 100PF
C30 100PF
R52 4.99KF
R55 4.99KF
AUX RETURN
JK4 +4dB 10KΩ
T
R
S
R64 10 (1/4W)
R65 10 (1/4W)
R66 10 (1/4W)
R67 10 (1/4W)
R68 10 (1/4W)
R69 10 (1/4W)
C38 220μF 25V
C39 4700PF
C40 220μF 25V
C41 4700PF
IC3
BTL
C34 100μF 25V
C35 4700PF
C36 100μF 25V
C37 4700PF
IC1
Σ
IC2
BA
GROUP
C42 220μF 25V
C43 4700PF
C44 220μF 25V
C45 4700PF
IC4
Σ
IC5
LA
AUX
IC2
2/2
C46 100μF 25V
C47 4700PF
C48 100μF 25V
C49 4700PF
IC6
BA
AUX RTN
3
4

Notes:

PF	Ceramic Capacitor
F	±1%Deviation Resistor
⊗	Fuse Type Resistor
⫻	Flame GND
⏚	Audio Common GND
▽	Summing GND
⏚	BTL GND

SIGNAL	Pin No.		SIGNAL
0V(12V)	34	33	+12V
PFL CONTROL	32	31	-15V
SUM GND	30	29	-15V
SUM GND	28	27	+15V
SUM GND	26	25	+15V
SUM GND	24	23	PFL
SUM GND	22	21	R
SUM GND	20	19	L
SUM GND	18	17	G4
SUM GND	16	15	G3
SUM GND	14	13	G2
SUM GND	12	11	G1
SUM GND	10	9	A4
SUM GND	8	7	A3
SUM GND	6	5	A2
SUM GND	4	3	A1
POWER MUTE	2	1	+48V

SCHEMATIC DIAGRAM



JK4 REC L OUT -10dB 10KΩ
MASTER L OUT +4dB 600Ω adopted
CN1
JK3 MONITOR L OUT +4dB 10KΩ
CN2 (4/5) G1
SW3 MONO MONITOR SWITCH
VR3 MONITOR MASTER LEVEL CONTROL
VR3 20KA X2
VR3-1
VR3-2
ST/MONO
BTL AMP
IC1
IC2
IC3
IC4
IC5
IC6
Q1
Q2
Q3
Q4
SW1 CHANNEL ON SWITCH
CH ON
FADER (-10)
CN6
ATT1 10KY
ATT1 OUTPUT FADER
INSERTION -20dB 10KΩ
JK2
TIP: RETURN RING: SEND SLEEVE: GROUND
SW2 PRE FADER LISTENING SWITCH
PFL
VR2 PFL CONTROL
VR2 20KA
E4
CN2 (1/5)
MASTER L BUS Rg=33KΩ
SUM GND
JK1 SUB IN +4dB 10KΩ
CN2 (2/5)
CN3
SIGNAL
0V(12V)
NC
TO METER PWB
CN2 (3/5)
POWER MUTE
PFL CONT
PFL BUS Rg=33KΩ
+15V
A
B
C
1
2

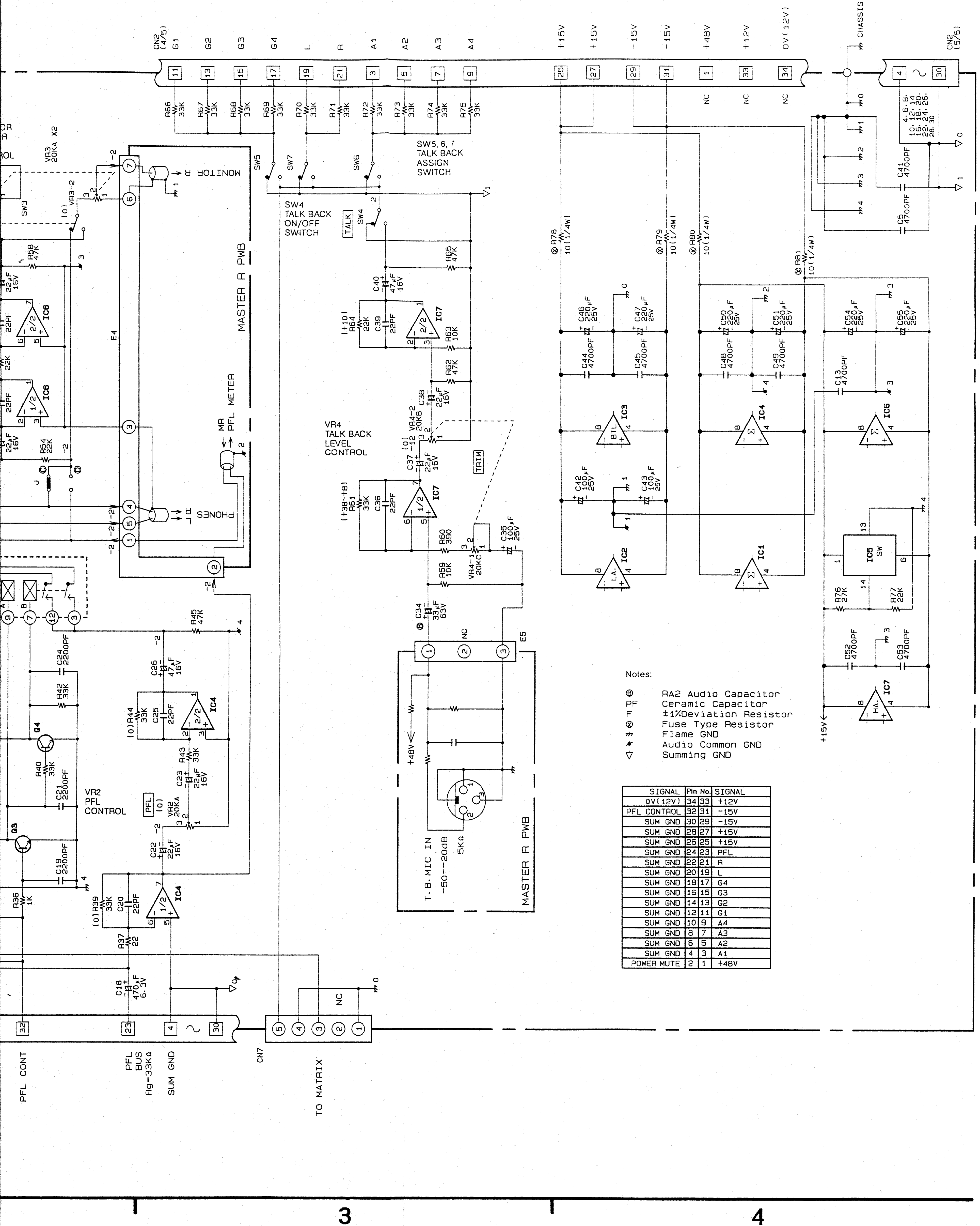
<Grid Key>

IC1	A1, B1
IC2	B1, B2, B3
IC3	C1, B3
IC4	A2, B4
IC5	B4
IC6	B2, B4
IC7	B3, B4
Q1	B1
Q2	B2
Q3	A2
Q4	A2

Switch No.	FUNCTION
SW1	Channel ON SW
SW2	Pre fader listening SW
SW3	Mono monitor SW
SW4	Talk back ON/OFF SW
SW5-7	Talk back assign SW

Volume No.	FUNCTION
VR2	Channel ON SW
VR3	Pre fader listening SW
VR4	Mono monitor SW

EMATIC DIAGRAM OF MASTER L



CN2 (4/5)
G1
G2
G3
G4
L
R
A1
A2
A3
A4
+15V
+15V
-15V
-15V
+48V
+12V
0V(12V)
CHASSIS
CN2 (5/5)
R66 33K
R67 33K
R68 33K
R69 33K
R70 33K
R71 33K
R72 33K
R73 33K
R74 33K
R75 33K
NC
4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30
C41 4700PF
C5 4700PF
VR3 20KA X2
MONITOR R
SW3
VR3-2
SW5
SW7
SW6
SW5, 6, 7 TALK BACK ASSIGN SWITCH
SW4 TALK BACK ON/OFF SWITCH
TALK
SW4
MASTER R PWB
E4
R58 47K
IC6
22PF
22K
R54 22K
MR PFL METER
PHONES L R
J
R65 47K
C40 47μF 16V
(+10) R64 22K
C39 22PF
IC7
R63 10K
R62 47K
C38 22μF 16V
VR4 TALK BACK LEVEL CONTROL
VR4-2 20KB
C37 22μF 16V
TRIM
(+38-+8) R61 33K
C36 22PF
R60 390
R59 10K
VR4-1 20KC
C35 100μF 25V
C34 33μF 63V
NC
E5
+48V
T.B.MIC IN -50--20dB 5KΩ
MASTER R PWB
R78 10(1/4W)
R79 10(1/4W)
R80 10(1/4W)
R81 10(1/4W)
C46 220μF 25V
C47 220μF 25V
C44 4700PF
C45 4700PF
IC3 BTL
C42 100μF 25V
C43 100μF 25V
IC2 L.A.
C50 220μF 25V
C51 220μF 25V
C48 4700PF
C49 4700PF
IC4 Σ
IC1 Σ
C54 220μF 25V
C55 220μF 25V
C13 4700PF
IC6 Σ
IC5 SW
R76 27K
R77 22K
C52 4700PF
C53 4700PF
IC7 HA.
+15V
R45 47K
C24 2200PF
R42 33K
Q4
R40 33K
C21 2200PF
Q3
C19 2200PF
R36 1K
C26 47μF 16V
(0)R44 33K
C25 22PF
IC4
R43 33K
C23 22μF 16V
VR2 PFL CONTROL
PFL
VR2 20KA
C22 22μF 16V
(0)R39 33K
C20 22PF
R37 22
C18 470μF 6.3V
PFL CONT
PFL BUS Rg=33KΩ
SUM GND
CN7
NC
TO MATRIX
3
4

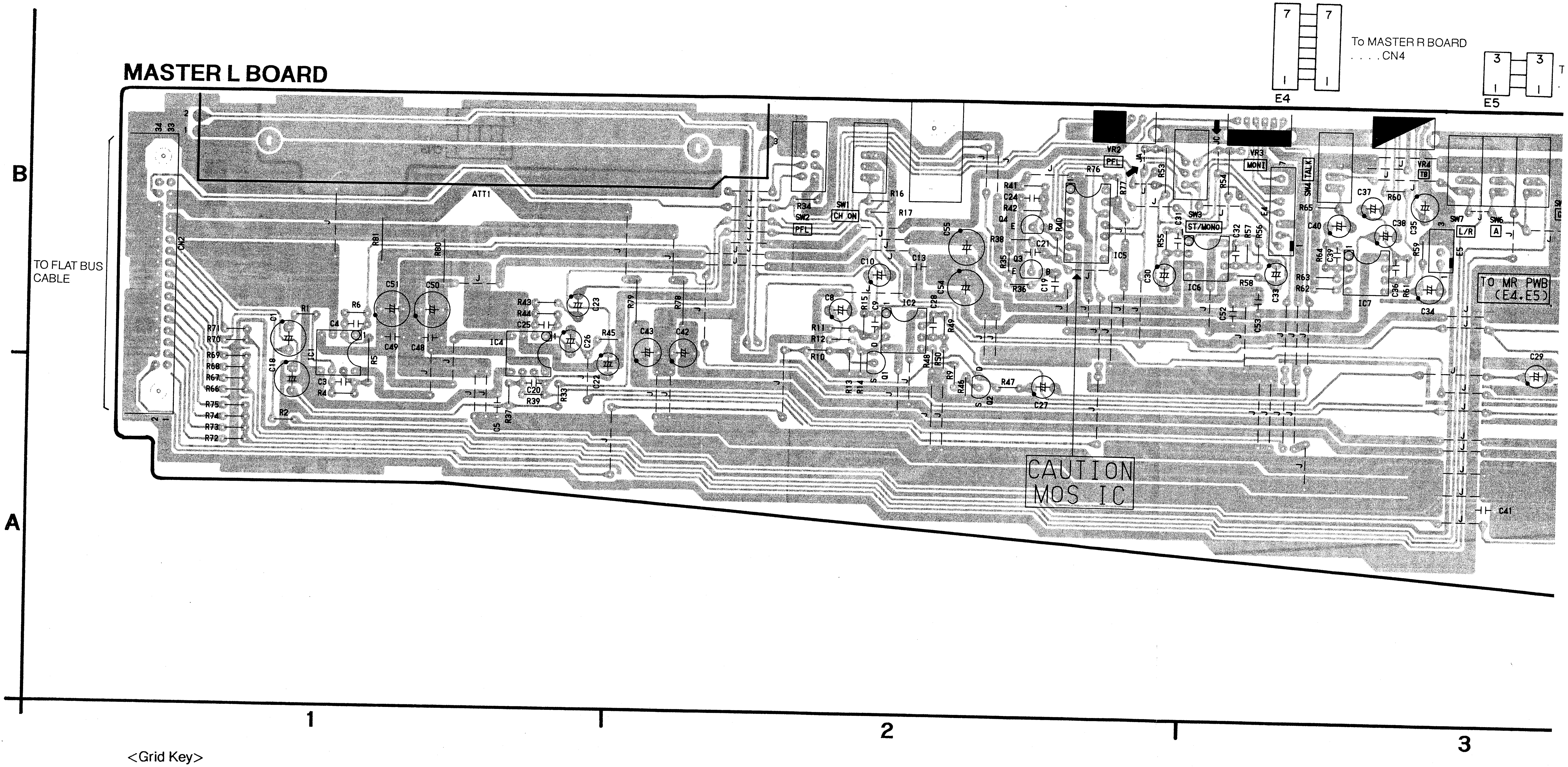
Notes:

⊕ RA2 Audio Capacitor
PF Ceramic Capacitor
F ±1%Deviation Resistor
⊗ Fuse Type Resistor
⏚ Flame GND
⏚ Audio Common GND
▽ Summing GND

SIGNAL	Pin No.		SIGNAL
0V(12V)	34	33	+12V
PFL CONTROL	32	31	-15V
SUM GND	30	29	-15V
SUM GND	28	27	+15V
SUM GND	26	25	+15V
SUM GND	24	23	PFL
SUM GND	22	21	R
SUM GND	20	19	L
SUM GND	18	17	G4
SUM GND	16	15	G3
SUM GND	14	13	G2
SUM GND	12	11	G1
SUM GND	10	9	A4
SUM GND	8	7	A3
SUM GND	6	5	A2
SUM GND	4	3	A1
POWER MUTE	2	1	+48V

SW

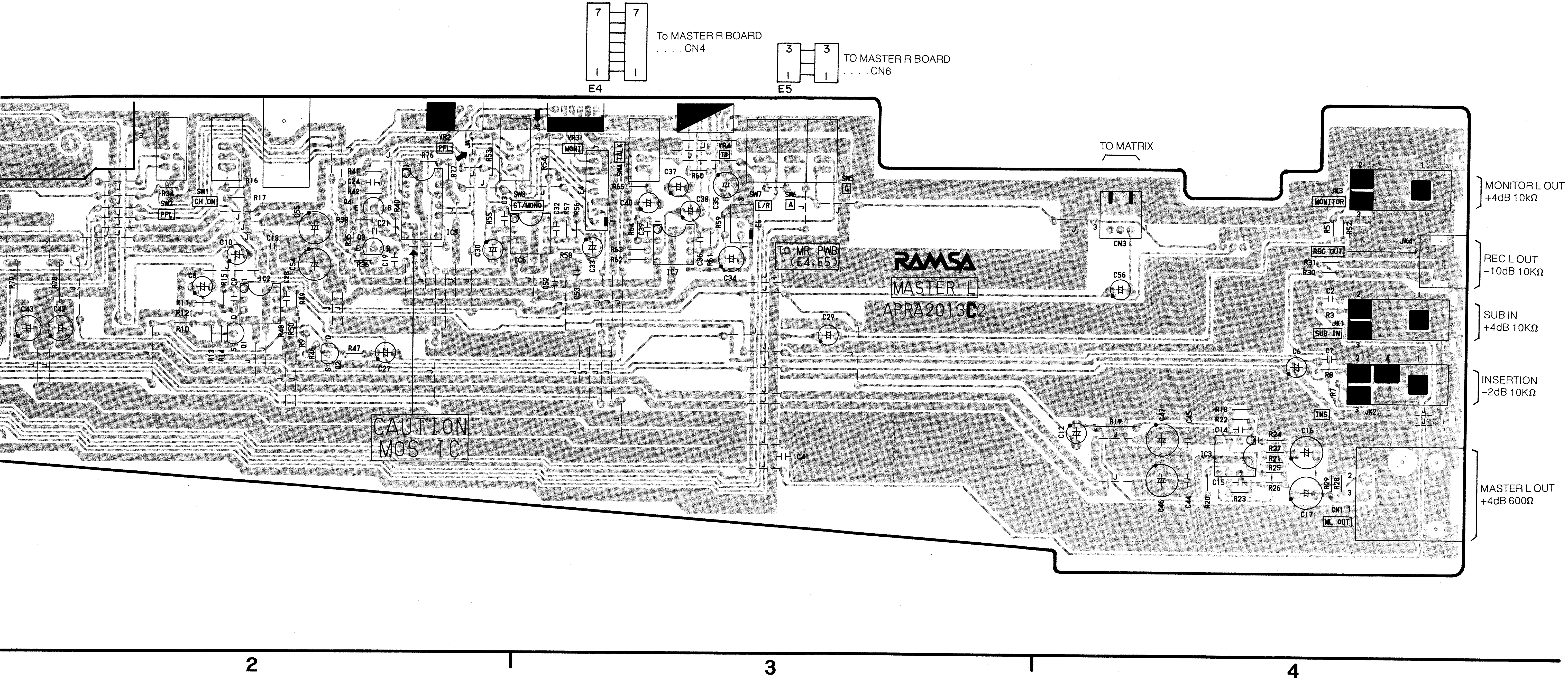
CONDUCTOR VIEW OF MASTER L


MASTER L BOARD
TO FLAT BUS CABLE
To MASTER R BOARD
. . . . CN4
E4
E5
7
3
1
B
A
1
2
3
CN2
ATT1
SW1 CH ON
SW2 PFL
VR2 PFL
VR3 MONI
VR4 TB
SW3 ST/MONO
SW4 TALK
SW6 A
SW7 L/R
IC1
IC2
IC4
IC5
IC6
IC7
Q1
Q2
Q3
CAUTION
MOS IC
TO MR PWB
(E4.E5)

<Grid Key>

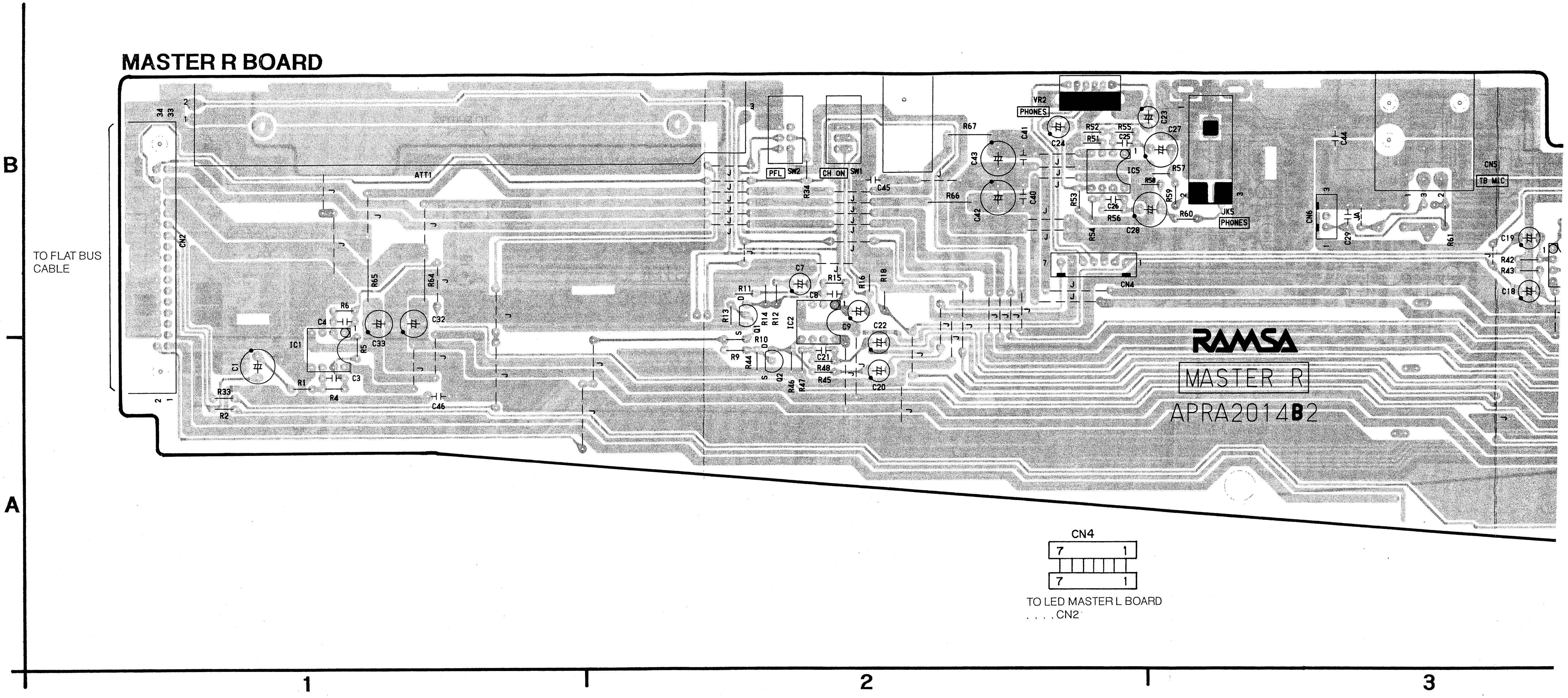
IC1	A1
IC2	B2
IC3	A4
IC4	A1
IC5	B2
IC6	B2
IC7	B3
Q1	A2
Q2	A2
Q3	B2
Q4	B2

CONDUCTOR VIEW OF MASTER L



To MASTER R BOARD CN4
E4
TO MASTER R BOARD CN6
E5
TO MATRIX
CN3
RAMSA
MASTER L
APRA2013C2
TO MR PWB (E4.E5)
CAUTION MOS IC
MONITOR L OUT +4dB 10kΩ
REC L OUT −10dB 10KΩ
SUB IN +4dB 10KΩ
INSERTION −2dB 10KΩ
MASTER L OUT +4dB 600Ω
JK3
MONITOR
JK4
REC OUT
JK1
SUB IN
JK2
INS
CN1
ML OUT
IC2
IC3
IC5
IC6
IC7
VR2
PFL
VR3
MONI
VR4
TB
SW1
CH ON
SW2
PFL
SW3
ST/MONO
SW4
TALK
SW5
G
SW6
A
SW7
L/R
2
3
4

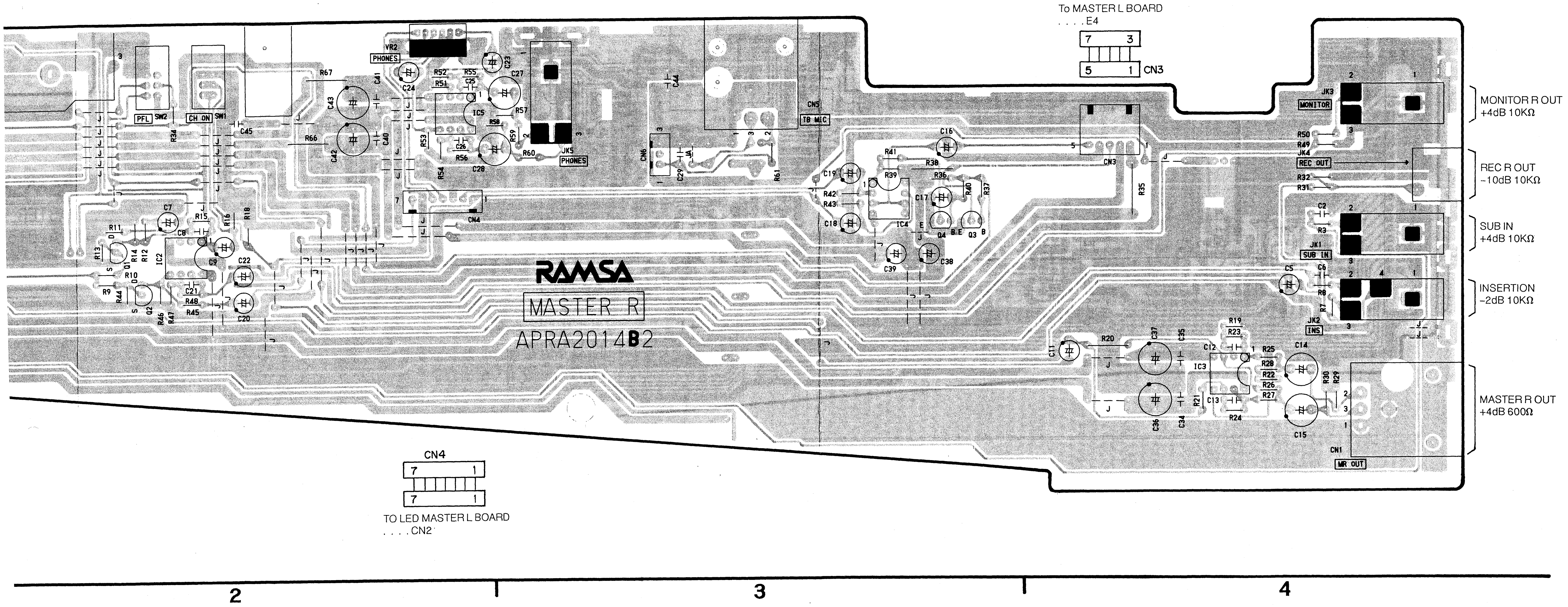
CONDUCTOR VIEW OF MASTER R


MASTER R BOARD
B
A
TO FLAT BUS CABLE
CN2
34
33
2
1
ATT1
IC1
C1
R1
R2
R33
R4
C3
C4
R5
R6
C33
R65
R64
C32
C46
PFL
SW2
CH ON
SW1
R34
C45
R11
R13
R14
R12
Q1
IC2
R10
R9
R44
Q2
R46
R47
R48
R45
C21
C7
C8
R15
R16
R18
C9
C22
C20
R67
C41
C43
C40
C42
R66
VR2
PHONES
C24
R52
R51
R55
C25
C23
C27
IC5
R57
R58
R53
C26
R56
R59
C28
R60
JK5
PHONES
R54
CN4
C44
CN5
TB MIC
CN6
C29
R61
C19
R42
R43
C18
RAMSA
MASTER R
APRA2014B2
CN4
7
1
7
1
TO LED MASTER L BOARD
. . . . CN2
1
2
3

<Grid Key>

IC1	A1
IC2	A2
IC3	A4
IC4	B3
IC5	B2
Q1	A2
Q2	A2
Q3	B3
Q4	B3

CONDUCTOR VIEW OF MASTER R


To MASTER L BOARD
. . . . E4
7
3
5
1
CN3
MONITOR R OUT
+4dB 10KΩ
REC R OUT
-10dB 10KΩ
SUB IN
+4dB 10KΩ
INSERTION
-2dB 10KΩ
MASTER R OUT
+4dB 600Ω
CN4
7
1
TO LED MASTER L BOARD
. . . . CN2
RAMSA
MASTER R
APRA2014B2
PFL
SW2
CH ON
SW1
VR2
PHONES
JK5
PHONES
CN6
CN5
TB MIC
JK3
MONITOR
JK4
REC OUT
JK1
SUB IN
JK2
INS
CN1
MR OUT
IC2
IC3
IC4
IC5
Q1
Q2
Q3
Q4
R9
R10
R11
R12
R13
R14
R15
R16
R18
R34
R44
R45
R46
R47
R48
R51
R52
R53
R54
R55
R56
R57
R58
R59
R60
R61
R66
R67
R3
R6
R7
R19
R20
R21
R22
R23
R24
R25
R26
R27
R28
R29
R30
R31
R32
R35
R36
R37
R38
R39
R40
R41
R42
R43
R49
R50
C2
C5
C6
C7
C8
C9
C11
C12
C13
C14
C15
C16
C17
C18
C19
C20
C21
C22
C23
C24
C25
C26
C27
C28
C29
C34
C35
C36
C37
C38
C39
C40
C41
C42
C43
C44
C45
2
3
4

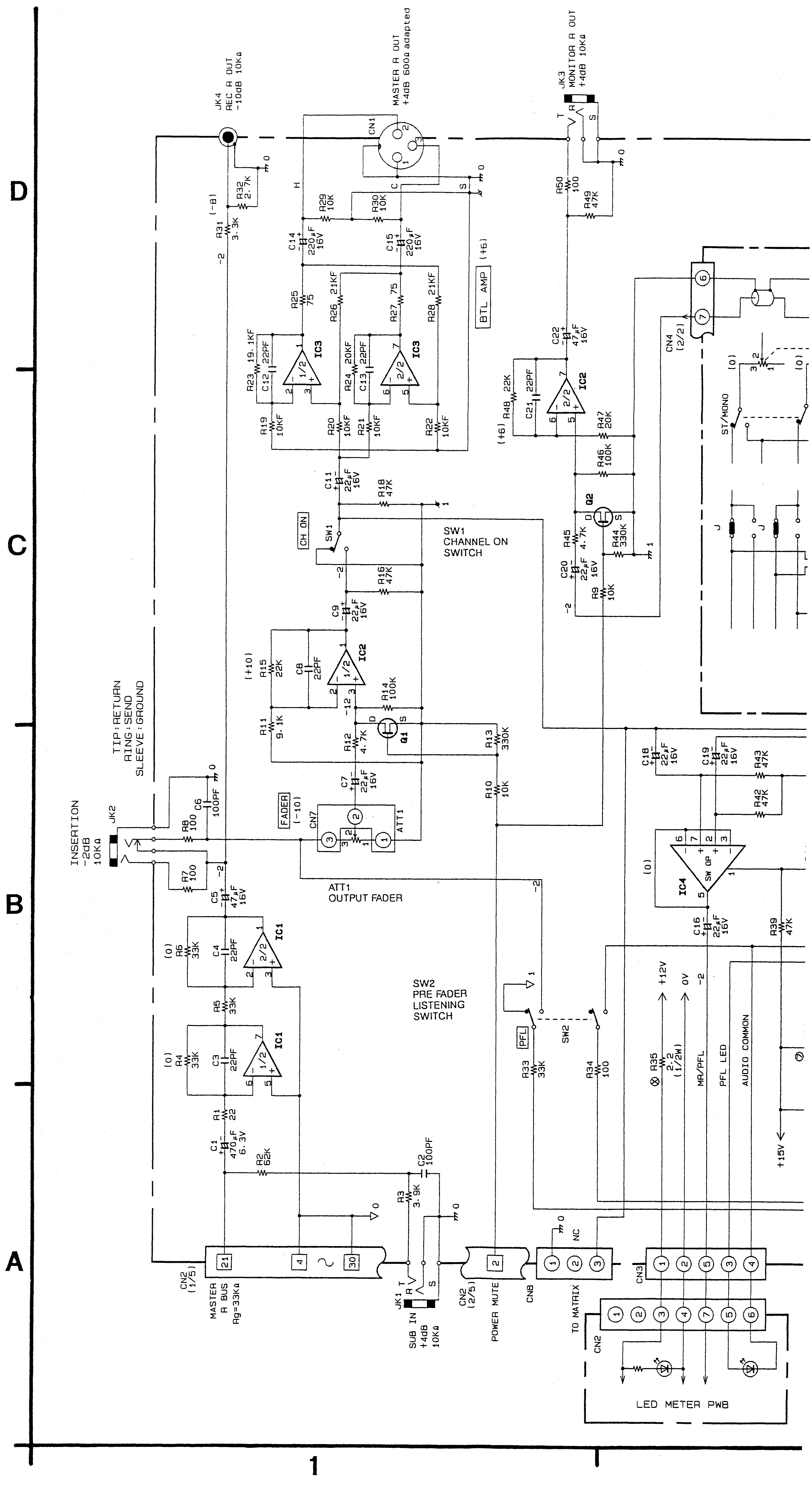
SCHEMATIC DIAGRAM OF

<Grid Key>

IC1	A1, B1
IC2	B1, C1
IC3	C1
IC4	B2
IC5	C2
Q1	B1
Q2	C2
Q3	A2
Q4	A2

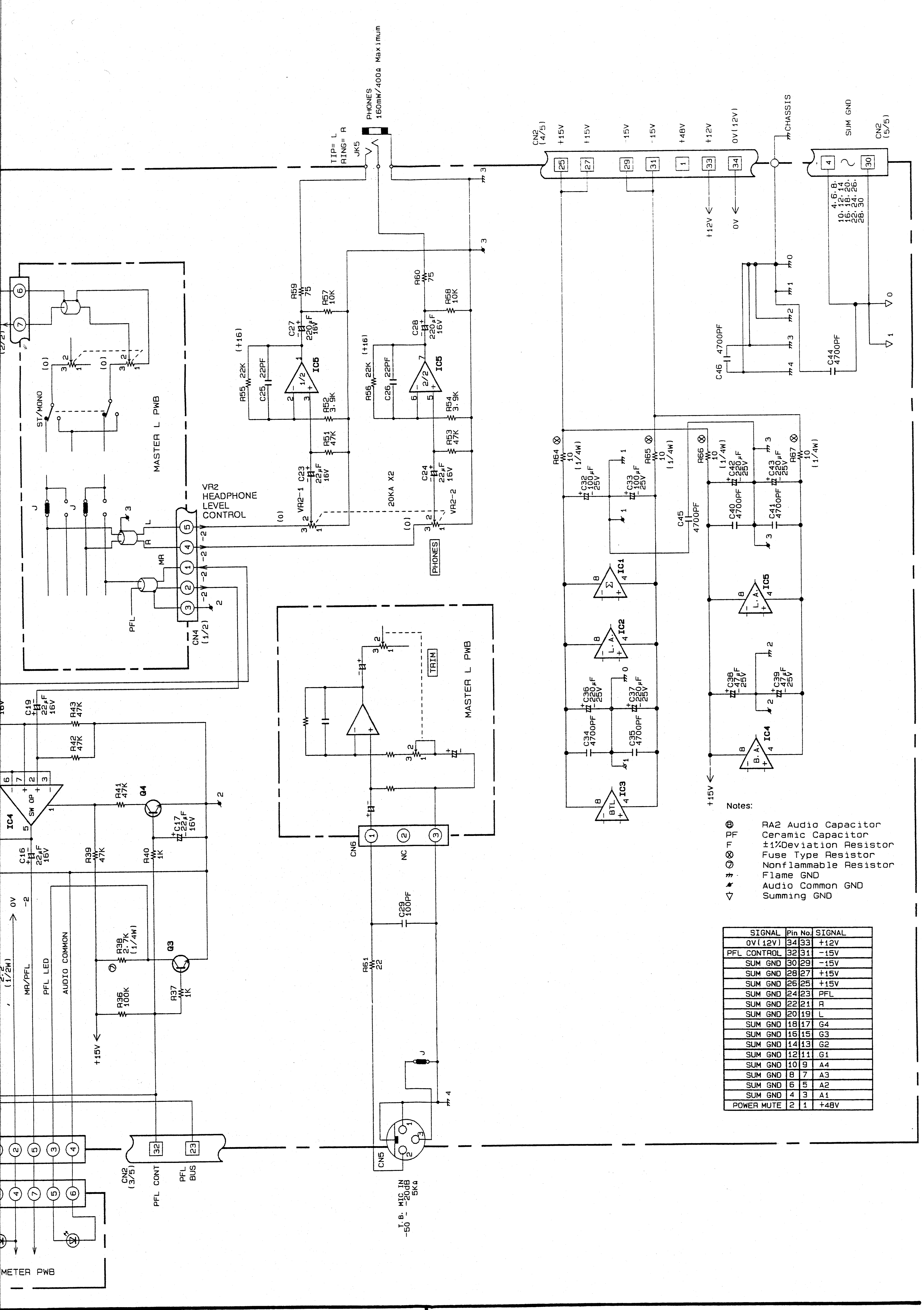
Switch No.	FUNCTION
SW1	Channel ON SW
SW2	Pre fader listening SW

Volume No.	FUNCTION
VR2	Headphone level Control



D
C
B
A
1
JK4 REC R OUT -10dB 10KΩ
MASTER R OUT +4dB 600Ω adapted
CN1
JK3 MONITOR R OUT +4dB 10KΩ
R32 2.7K
R31 3.3K
R29 10K
R30 10K
R50 100
R49 47K
C14 220μF 16V
C15 220μF 16V
BTL AMP (+6)
R25 75
R26 21KF
R27 75
R28 21KF
R23 19.1KF
C12 22PF
IC3
R24 20KF
C13 22PF
R19 10KF
R20 10KF
R21 10KF
R22 10KF
C22 47μF 16V
R48 22K
C21 22PF
IC2
R47 20K
R46 100K
Q2
R45 4.7K
R44 330K
C20 22μF 16V
R9 10K
CN4 (2/2)
ST/MONO
C11 22μF 16V
R18 47K
CH ON
SW1
SW1 CHANNEL ON SWITCH
R16 47K
C9 22μF 16V
(+10)
R15 22K
C8 22PF
R14 100K
R11 9.1K
R12 4.7K
Q1
R13 330K
TIP: RETURN RING: SEND SLEEVE: GROUND
INSERTION -2dB 10KΩ
JK2
R8 100
C6 100PF
FADER (-10)
CN7
C7 22μF 16V
ATT1
ATT1 OUTPUT FADER
R10 10K
C18 22μF 16V
C19 22μF 16V
R43 47K
R42 47K
IC4
SW OP
C16 22μF 16V
R39 47K
R7 100
C5 47μF 16V
IC1
R6 33K
C4 22PF
R5 33K
SW2 PRE FADER LISTENING SWITCH
PFL
SW2
R4 33K
C3 22PF
R33 33K
R34 100
R35 2.2 (1/2W)
+12V
0V
MA/PFL
PFL LED
AUDIO COMMON
+15V
R1 22
C1 470μF 6.3V
R2 62K
C2 100PF
R3 3.9K
CN2 (1/5)
MASTER R BUS Rg=33KΩ
JK1
SUB IN +4dB 10KΩ
CN2 (2/5)
POWER MUTE
CN8
NC
TO MATRIX
CN3
CN2
LED METER PWB

IAGRAM OF MASTER R



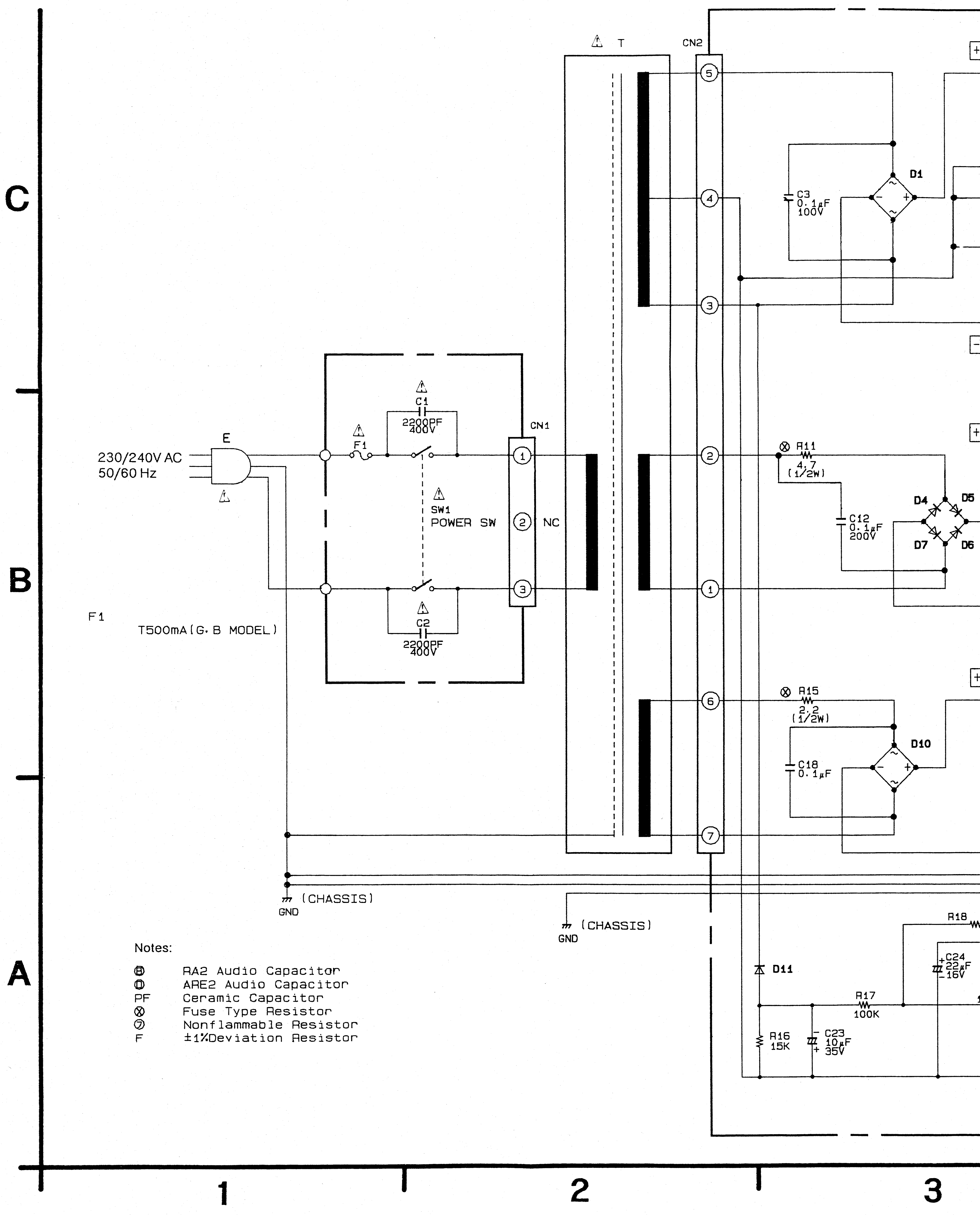
PHONES
160mW/400Ω Maximum
TIP= L
RING= R
JK5
CN2 (4/5)
+15V
+15V
-15V
-15V
+48V
+12V
0V(12V)
CHASSIS
SUM GND
CN2 (5/5)
4.6.8.
10.12.14.
16.18.20.
22.24.26.
28.30
+12V
0V
R59 75
R57 10K
R60 75
R58 10K
C27 220μF 16V
C28 220μF 16V
R55 22K
C25 22PF
R56 22K
C26 22PF
IC5
1/2
2/2
R52 3.9K
R54 3.9K
R51 47K
R53 47K
C23 22μF 16V
C24 22μF 16V
VR2-1
VR2-2
20KA X2
VR2
HEADPHONE
LEVEL
CONTROL
PHONES
MASTER L PWB
ST/MONO
CN4 (1/2)
PFL
MR
C46 4700PF
C44 4700PF
R64 10 (1/4W)
R65 10 (1/4W)
R66 10 (1/4W)
R67 10 (1/4W)
C32 100μF 25V
C33 100μF 25V
C42 220μF 25V
C43 220μF 25V
C40 4700PF
C41 4700PF
C45 4700PF
IC1
IC2
IC3
IC4
IC5
Σ
L.A.
BTL
B.A.
C36 220μF 25V
C37 220μF 25V
C34 4700PF
C35 4700PF
C38 47μF 25V
C39 47μF 25V
+15V
TRIM
MASTER L PWB
CN6
NC
C29 100PF
R61 22
CN5
I.B. MIC IN
-50 - -20dB
5KΩ
C19 22μF 16V
R43 47K
R42 47K
SW OP
R41 47K
Q4
C17 22μF 16V
C16 22μF 16V
R39 47K
R40 1K
0V
-2
MR/PFL
PFL LED
AUDIO COMMON
R38 2.7K (1/4W)
Q3
R36 100K
R37 1K
+15V
CN2 (3/5)
PFL CONT
PFL BUS
METER PWB
2
3

Notes:

Ⓑ	RA2 Audio Capacitor
PF	Ceramic Capacitor
F	±1%Deviation Resistor
⊗	Fuse Type Resistor
⑦	Nonflammable Resistor
⏚	Flame GND
▼	Audio Common GND
▽	Summing GND

SIGNAL	Pin No.		SIGNAL
0V(12V)	34	33	+12V
PFL CONTROL	32	31	-15V
SUM GND	30	29	-15V
SUM GND	28	27	+15V
SUM GND	26	25	+15V
SUM GND	24	23	PFL
SUM GND	22	21	R
SUM GND	20	19	L
SUM GND	18	17	G4
SUM GND	16	15	G3
SUM GND	14	13	G2
SUM GND	12	11	G1
SUM GND	10	9	A4
SUM GND	8	7	A3
SUM GND	6	5	A2
SUM GND	4	3	A1
POWER MUTE	2	1	+48V

SCHEMATIC DIAGRAM OF PO



C
B
A
1
2
3
T
CN2
CN1
E
230/240V AC
50/60 Hz
C1
2200PF
400V
F1
SW1
POWER SW
NC
C2
2200PF
400V
F1
T500mA(G.B MODEL)
C3
0.1μF
100V
D1
R11
4.7
(1/2W)
C12
0.1μF
200V
D4
D5
D7
D6
R15
2.2
(1/2W)
C18
0.1μF
D10
(CHASSIS)
GND
(CHASSIS)
GND
R18
C24
22μF
16V
D11
R17
100K
R16
15K
C23
10μF
35V

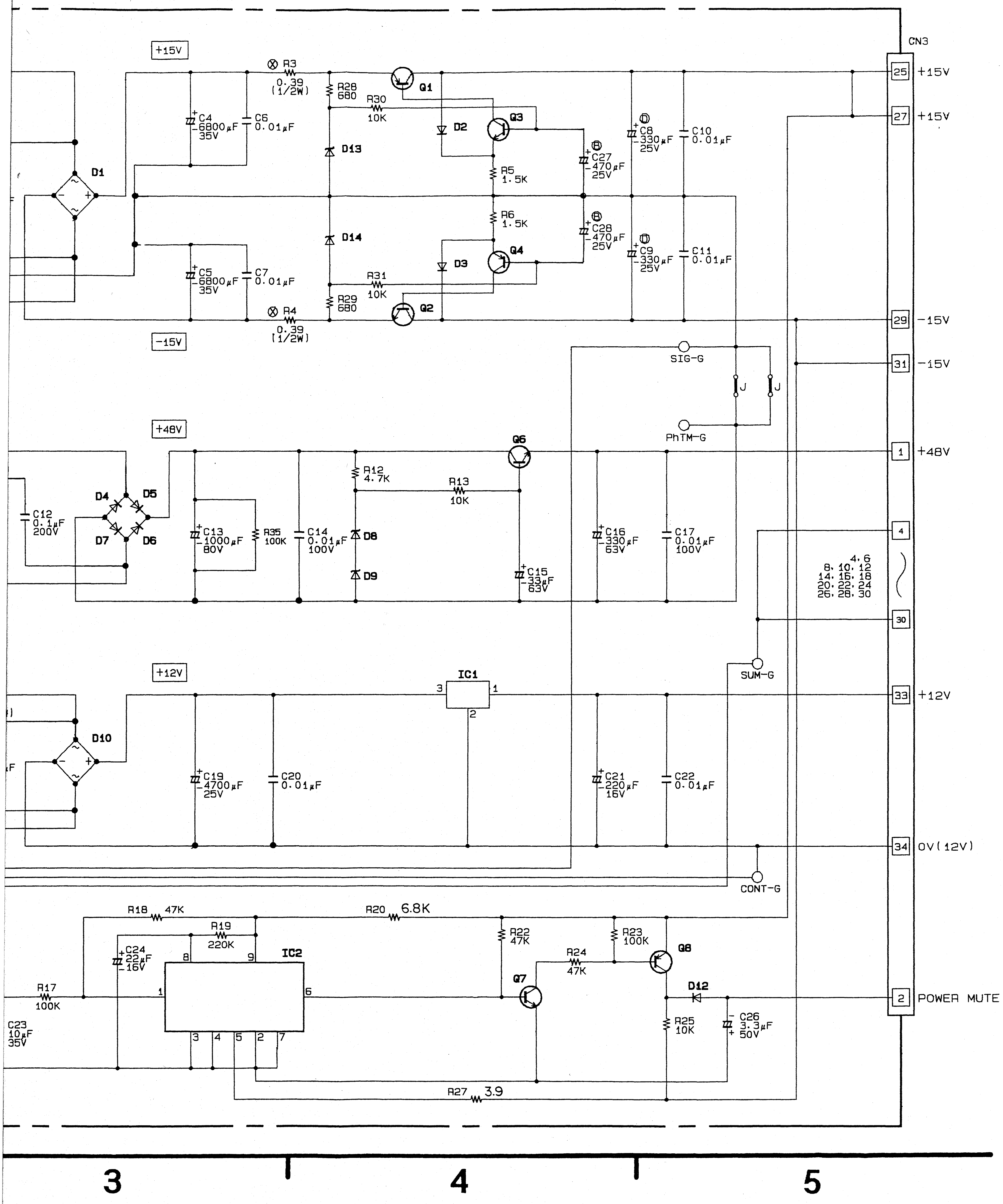
Notes:

Ⓑ	RA2 Audio Capacitor
Ⓓ	ARE2 Audio Capacitor
PF	Ceramic Capacitor
⊗	Fuse Type Resistor
⑦	Nonflammable Resistor
F	±1%Deviation Resistor

<Grid Key>

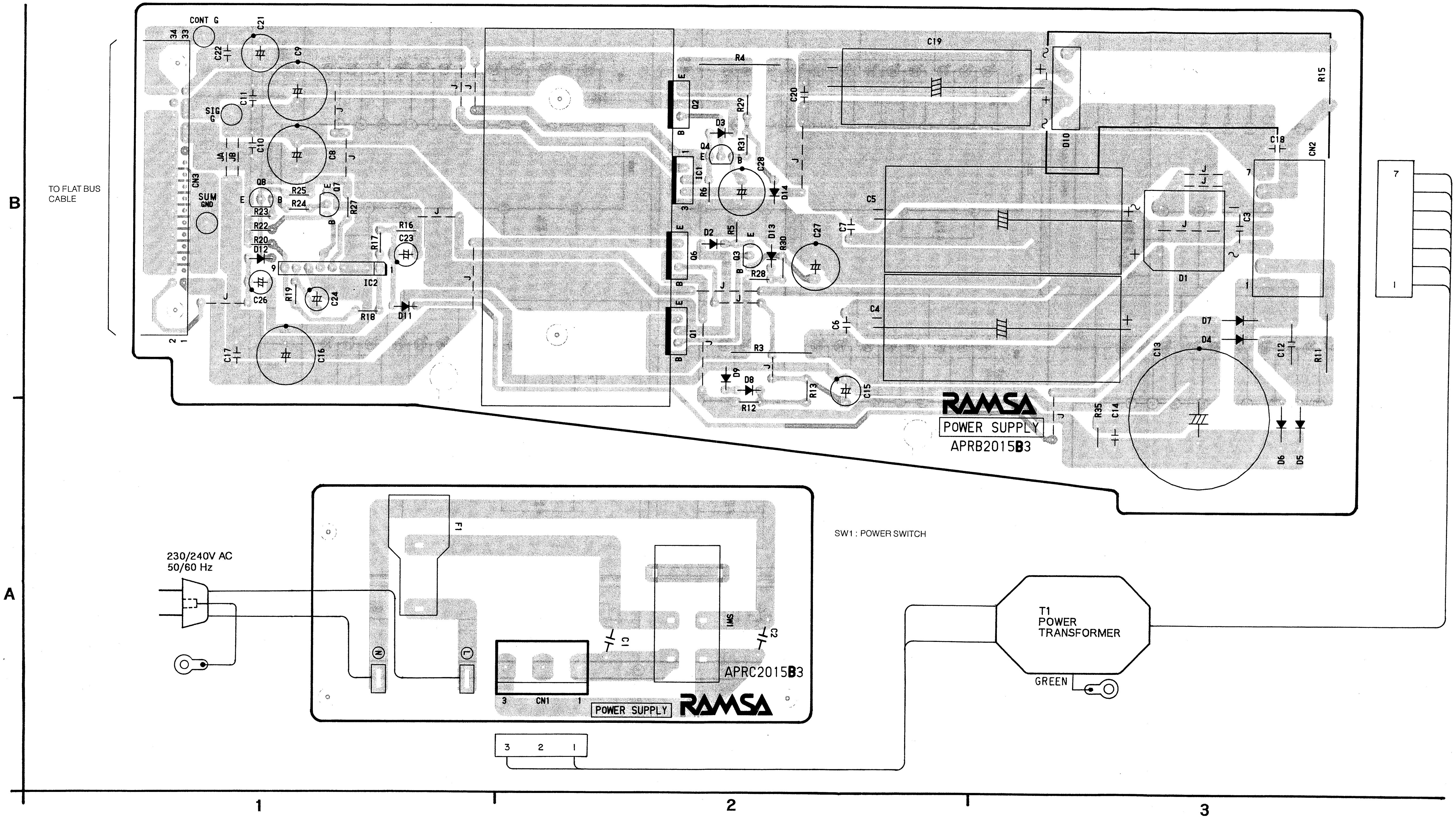
IC1	B4	D1	C3
IC2	A3	D2, 3	4C
Q1	C4	D4, 5, 6, 7	B3
Q2	C4	D8, 9	B4
Q3	C4	D10	B3
Q4	C4	D11	A2
Q6	B4	D12	A5
Q7	A4	D13, 14	C4
Q8	A4		

IAGRAM OF POWER SUPPLY


CN3
+15V
R3
0.39
(1/2W)
R28
680
R30
10K
Q1
C4
6800μF
35V
C6
0.01μF
D1
D13
D2
Q3
R5
1.5K
C27
470μF
25V
C8
330μF
25V
C10
0.01μF
R6
1.5K
D14
Q4
D3
C28
470μF
25V
C9
330μF
25V
C11
0.01μF
C5
6800μF
35V
C7
0.01μF
R31
10K
R29
680
Q2
R4
0.39
(1/2W)
-15V
25
+15V
27
+15V
29
-15V
31
-15V
SIG-G
J
J
PhTM-G
+48V
Q6
R12
4.7K
R13
10K
D4
D5
D7
D6
C12
0.1μF
200V
C13
1000μF
80V
R35
100K
C14
0.01μF
100V
D8
D9
C15
33μF
63V
C16
330μF
63V
C17
0.01μF
100V
1
+48V
4
4, 6
8, 10, 12
14, 16, 18
20, 22, 24
26, 28, 30
30
SUM-G
+12V
IC1
3
1
2
D10
C19
4700μF
25V
C20
0.01μF
C21
220μF
16V
C22
0.01μF
33
+12V
34
0V(12V)
CONT-G
R18
47K
R20
6.8K
R19
220K
C24
22μF
16V
8
9
IC2
R22
47K
R23
100K
Q8
R24
47K
Q7
D12
R17
100K
1
6
3
4
5
2
7
C23
10μF
35V
R25
10K
C26
3.3μF
50V
2
POWER MUTE
R27
3.9
3
4
5

CONDUCTOR VIEW OF POWER SUPPLY

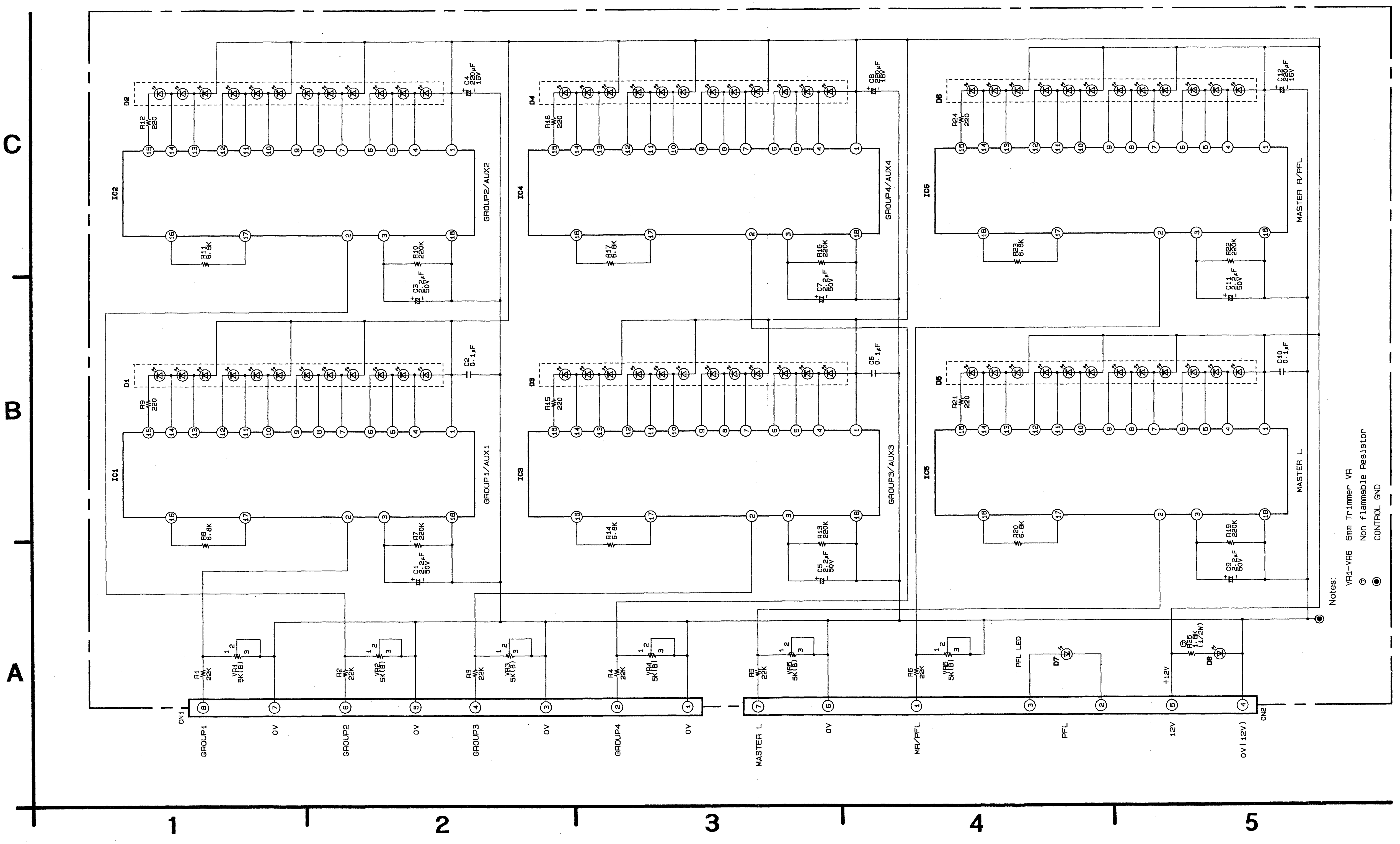
POWER SUPPLY BOARD


TO FLAT BUS CABLE
B
A
1
2
3
CONT G
SIG G
SUM GND
CN3
IC2
IC1
C19
R4
R15
CN2
D10
D1
C5
C4
RAMSA
POWER SUPPLY
APRB2015B3
SW1 : POWER SWITCH
230/240V AC
50/60 Hz
F1
SW1
C1
C3
CN1
APRC2015B3
T1
POWER
TRANSFORMER
GREEN

<Grid K

IC1	B2
IC2	B1
Q1	B2
Q2	B2
Q3	B2
Q4	B2
Q6	b2
Q7	B2
Q8	B1
D1	B3
D2	B2
D3	B2
D4	B3
D5	A3
D6	A3
D7	B3
D8	A2
D9	A2
D10	B3
D11	B1
D12	B1
D13	B2
D14	B2

SCHEMATIC DIAGRAM OF LED METER


C
B
A
1
2
3
4
5
IC1
IC2
IC3
IC4
IC5
IC6
D1
D2
D3
D4
D5
D6
GROUP1/AUX1
GROUP2/AUX2
GROUP3/AUX3
GROUP4/AUX4
MASTER L
MASTER R/PFL
R12 220
R9 220
R18 220
R15 220
R24 220
R21 220
R11 6.8K
R8 6.8K
R17 6.8K
R14 6.8K
R23 6.8K
R20 6.8K
R10 220K
R7 220K
R16 220K
R13 220K
R22 220K
R19 220K
C4 220μF 16V
C8 220μF 16V
C12 220μF 16V
C2 0.1μF
C6 0.1μF
C10 0.1μF
C3 2.2μF 50V
C1 2.2μF 50V
C7 2.2μF 50V
C5 2.2μF 50V
C11 2.2μF 50V
C9 2.2μF 50V
R1 22K
R2 22K
R3 22K
R4 22K
R5 22K
R6 22K
VR1 5K(B)
VR2 5K(B)
VR3 5K(B)
VR4 5K(B)
VR5 5K(B)
VR6 5K(B)
PFL LED
D7
D8
R25 2.2K (1/2W)
+12V
CN1
CN2
GROUP1
0V
GROUP2
0V
GROUP3
0V
GROUP4
0V
MASTER L
0V
MR/PFL
PFL
12V
0V(12V)
Notes:
VR1-VR6 6mm Trimmer VR
Non flammable Resistor
CONTROL GND

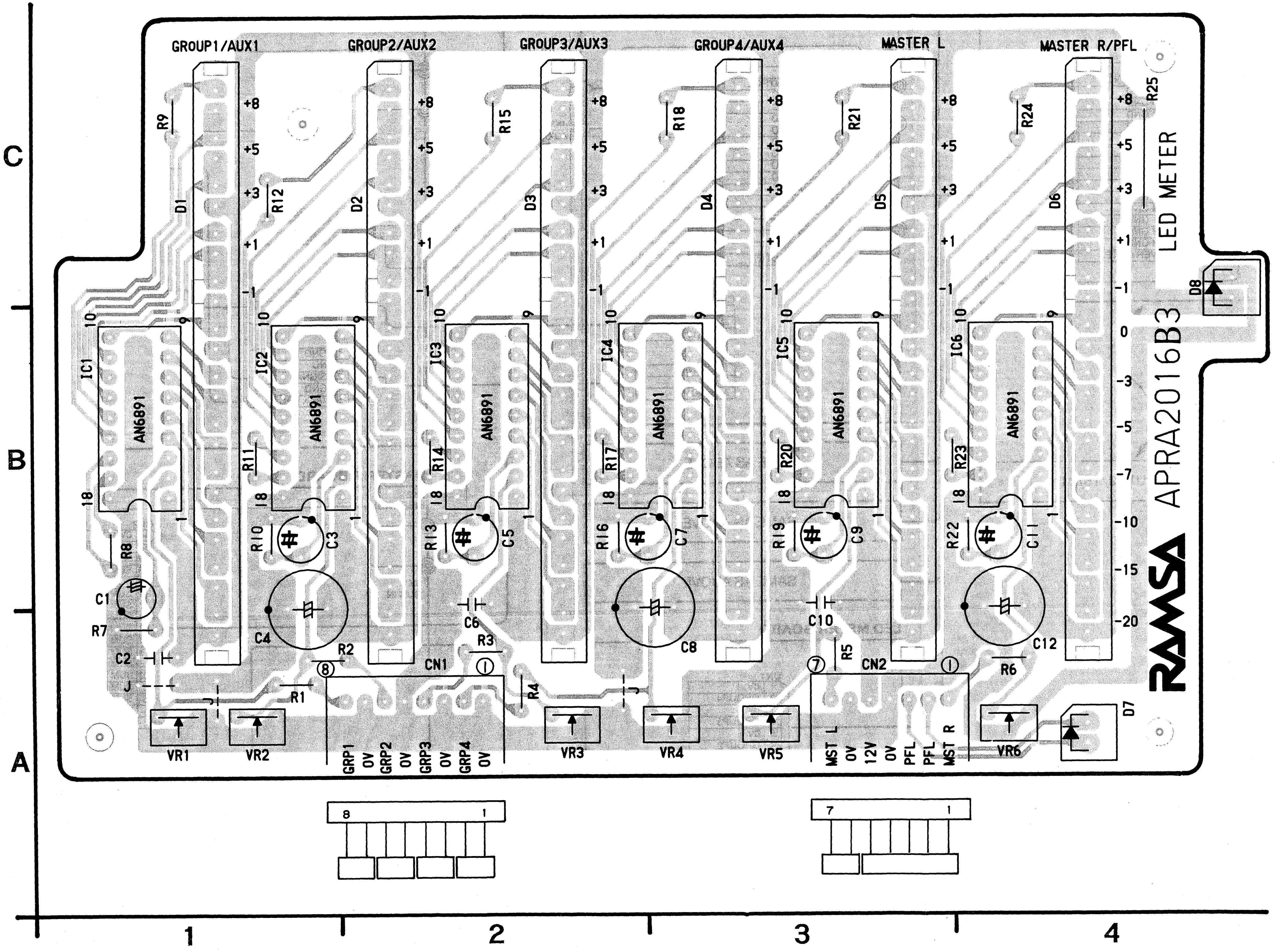
<Grid Key>

IC1	B1
IC2	C1
IC3	B2
IC4	C2
IC5	B4
IC6	C4
D1	B1
D2	C1
D3	B2
D4	C2
D5	B4
D6	C4

CONDUCTOR VIEW OF LED METER

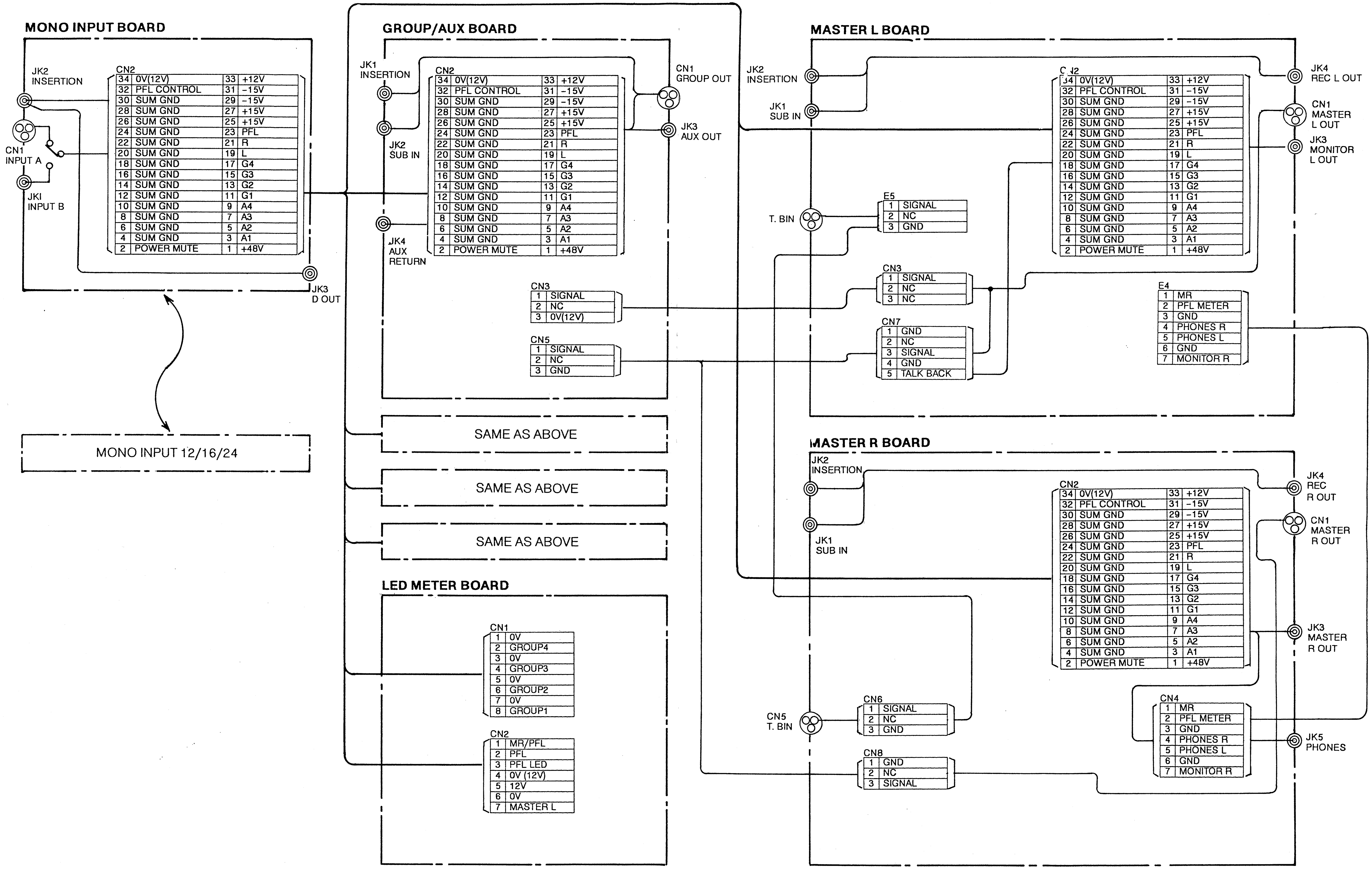
<Grid Key>

IC1	B1
IC2	B1
IC3	B2
IC4	B2
IC5	B3
IC6	B4
D1	C1
D2	C2
D3	C2
D4	C3
D5	C3
D6	C4



C
B
A
1
2
3
4
GROUP1/AUX1
GROUP2/AUX2
GROUP3/AUX3
GROUP4/AUX4
MASTER L
MASTER R/PFL
LED METER
APRA2016B3
RAMSA
+8
+5
+3
+1
-1
0
-3
-5
-7
-10
-15
-20
D1
D2
D3
D4
D5
D6
D7
D8
IC1
IC2
IC3
IC4
IC5
IC6
AN6891
R1
R2
R3
R4
R5
R6
R7
R8
R9
R10
R11
R12
R13
R14
R15
R16
R17
R18
R19
R20
R21
R22
R23
R24
R25
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
C12
J
VR1
VR2
VR3
VR4
VR5
VR6
CN1
CN2
⑧
①
⑦
GRP1
0V
GRP2
0V
GRP3
0V
GRP4
0V
MST L
0V
12V
0V
PFL
PFL
MST R
8
1
7
1
10
9
18
1

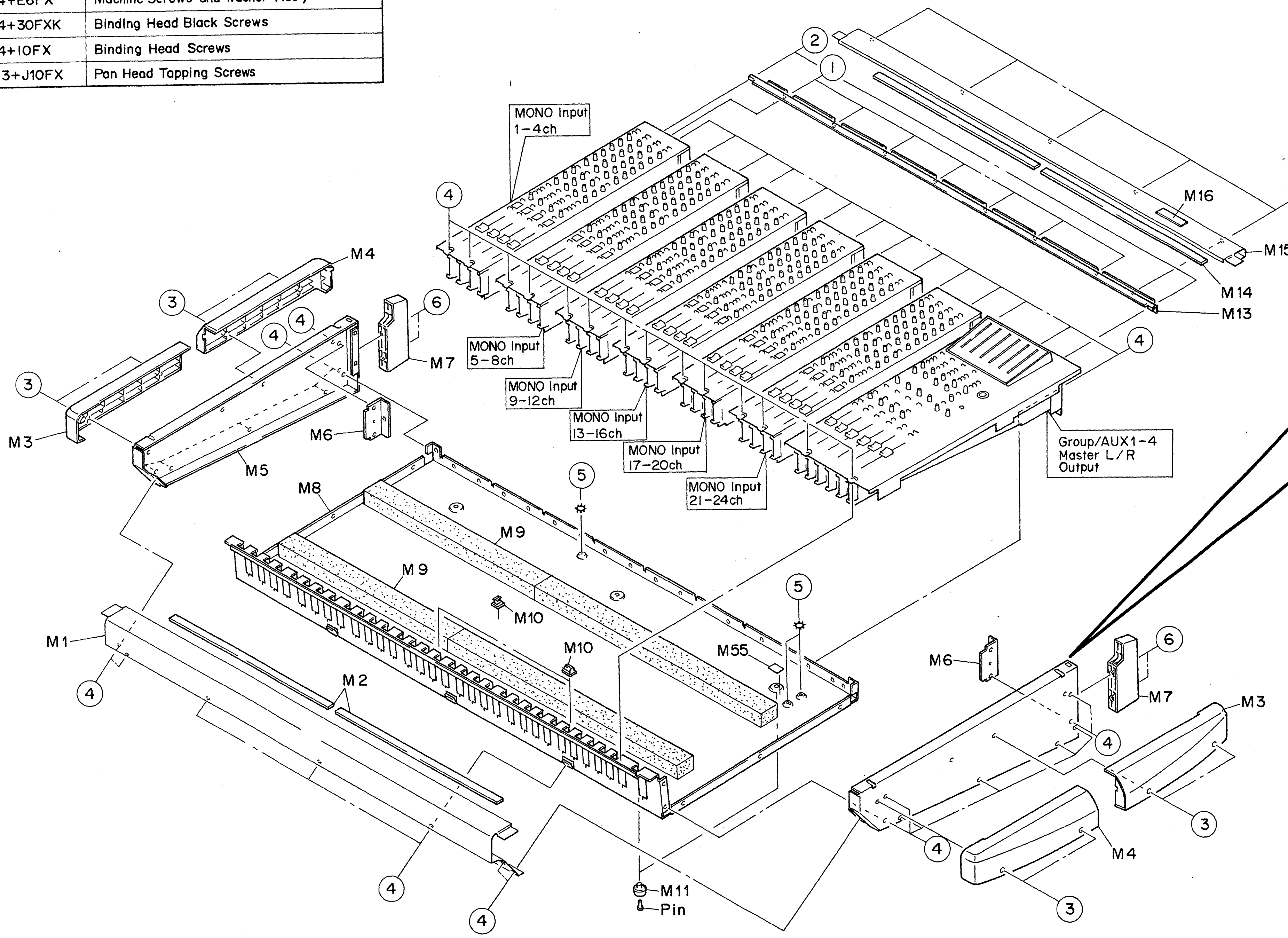
TOTAL CONNECTION DIAGRAM

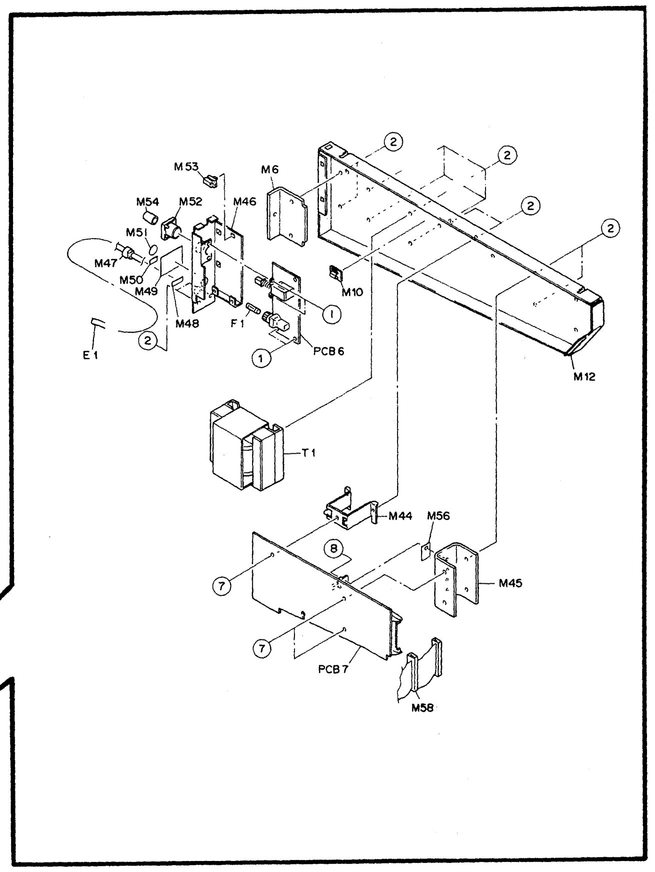

MONO INPUT BOARD
JK2 INSERTION
CN1 INPUT A
JKI INPUT B
JK3 D OUT
CN2
34 0V(12V) | 33 +12V
32 PFL CONTROL | 31 −15V
30 SUM GND | 29 −15V
28 SUM GND | 27 +15V
26 SUM GND | 25 +15V
24 SUM GND | 23 PFL
22 SUM GND | 21 R
20 SUM GND | 19 L
18 SUM GND | 17 G4
16 SUM GND | 15 G3
14 SUM GND | 13 G2
12 SUM GND | 11 G1
10 SUM GND | 9 A4
8 SUM GND | 7 A3
6 SUM GND | 5 A2
4 SUM GND | 3 A1
2 POWER MUTE | 1 +48V
MONO INPUT 12/16/24
GROUP/AUX BOARD
JK1 INSERTION
JK2 SUB IN
JK4 AUX RETURN
CN1 GROUP OUT
JK3 AUX OUT
CN2
34 0V(12V) | 33 +12V
32 PFL CONTROL | 31 −15V
30 SUM GND | 29 −15V
28 SUM GND | 27 +15V
26 SUM GND | 25 +15V
24 SUM GND | 23 PFL
22 SUM GND | 21 R
20 SUM GND | 19 L
18 SUM GND | 17 G4
16 SUM GND | 15 G3
14 SUM GND | 13 G2
12 SUM GND | 11 G1
10 SUM GND | 9 A4
8 SUM GND | 7 A3
6 SUM GND | 5 A2
4 SUM GND | 3 A1
2 POWER MUTE | 1 +48V
CN3
1 SIGNAL
2 NC
3 0V(12V)
CN5
1 SIGNAL
2 NC
3 GND
SAME AS ABOVE
SAME AS ABOVE
SAME AS ABOVE
LED METER BOARD
CN1
1 0V
2 GROUP4
3 0V
4 GROUP3
5 0V
6 GROUP2
7 0V
8 GROUP1
CN2
1 MR/PFL
2 PFL
3 PFL LED
4 0V (12V)
5 12V
6 0V
7 MASTER L
MASTER L BOARD
JK2 INSERTION
JK1 SUB IN
T. BIN
JK4 REC L OUT
CN1 MASTER L OUT
JK3 MONITOR L OUT
CN2
34 0V(12V) | 33 +12V
32 PFL CONTROL | 31 −15V
30 SUM GND | 29 −15V
28 SUM GND | 27 +15V
26 SUM GND | 25 +15V
24 SUM GND | 23 PFL
22 SUM GND | 21 R
20 SUM GND | 19 L
18 SUM GND | 17 G4
16 SUM GND | 15 G3
14 SUM GND | 13 G2
12 SUM GND | 11 G1
10 SUM GND | 9 A4
8 SUM GND | 7 A3
6 SUM GND | 5 A2
4 SUM GND | 3 A1
2 POWER MUTE | 1 +48V
E5
1 SIGNAL
2 NC
3 GND
CN3
1 SIGNAL
2 NC
3 NC
CN7
1 GND
2 NC
3 SIGNAL
4 GND
5 TALK BACK
E4
1 MR
2 PFL METER
3 GND
4 PHONES R
5 PHONES L
6 GND
7 MONITOR R
MASTER R BOARD
JK2 INSERTION
JK1 SUB IN
CN5 T. BIN
JK4 REC R OUT
CN1 MASTER R OUT
JK3 MASTER R OUT
JK5 PHONES
CN2
34 0V(12V) | 33 +12V
32 PFL CONTROL | 31 −15V
30 SUM GND | 29 −15V
28 SUM GND | 27 +15V
26 SUM GND | 25 +15V
24 SUM GND | 23 PFL
22 SUM GND | 21 R
20 SUM GND | 19 L
18 SUM GND | 17 G4
16 SUM GND | 15 G3
14 SUM GND | 13 G2
12 SUM GND | 11 G1
10 SUM GND | 9 A4
8 SUM GND | 7 A3
6 SUM GND | 5 A2
4 SUM GND | 3 A1
2 POWER MUTE | 1 +48V
CN6
1 SIGNAL
2 NC
3 GND
CN8
1 GND
2 NC
3 SIGNAL
CN4
1 MR
2 PFL METER
3 GND
4 PHONES R
5 PHONES L
6 GND
7 MONITOR R

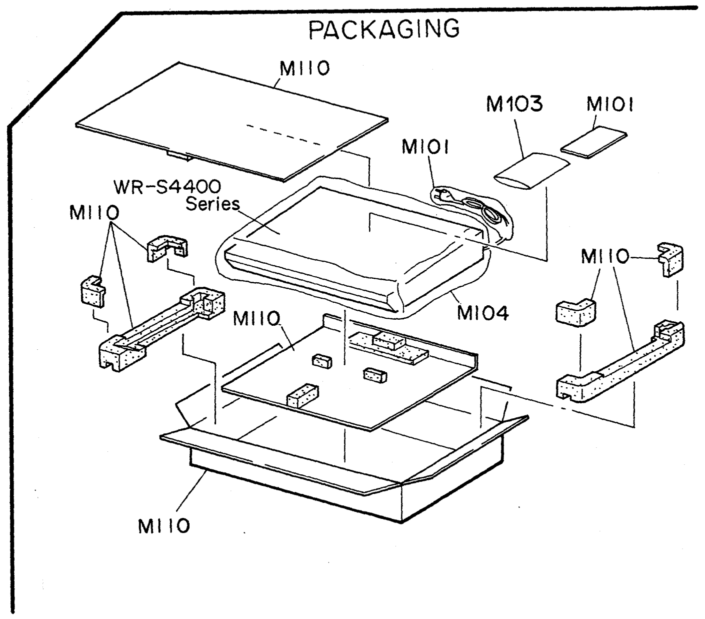
EXPLODED VIEW OF CONSOLE

○ Numbers show screws, washers, nuts, etc.

NO	Screws	Description
①	XTB3+6FFXK	Binding Head Tapping Black Screws
②	XTB3+8FXK	Binding Head Black Screws
③	XSB4+20FXK	Binding Head Black Screws
④	XSB4+8FXK	Binding Head Black Screws
⑤	XYN4+E6FX	Machine Screws and Washer Ass'y
⑥	XSB4+30FXK	Binding Head Black Screws
⑦	XSB4+10FX	Binding Head Screws
⑧	XYM3+J10FX	Pan Head Tapping Screws


②
①
MONO Input 1-4ch
④
M16
①
M15
M14
M13
M4
③
⑥
④ ④
M7
MONO Input 5-8ch
MONO Input 9-12ch
MONO Input 13-16ch
MONO Input 17-20ch
MONO Input 21-24ch
④
Group/AUX1-4 Master L/R Output
③
M3
M6
M5
M8
⑤
M9
M9
M10
M10
⑤
M55
M1
④
M2
④
④
M11
Pin
M6
⑥
M7
M3
④
③
④
M4
③


M53
M6
②
②
②
②
M54
M52
M46
M51
M47
M50
M49
M10
①
E1
②
M48
F1
①
PCB6
M12
T1
M44
M56
⑧
⑦
M45
⑦
PCB7
M58

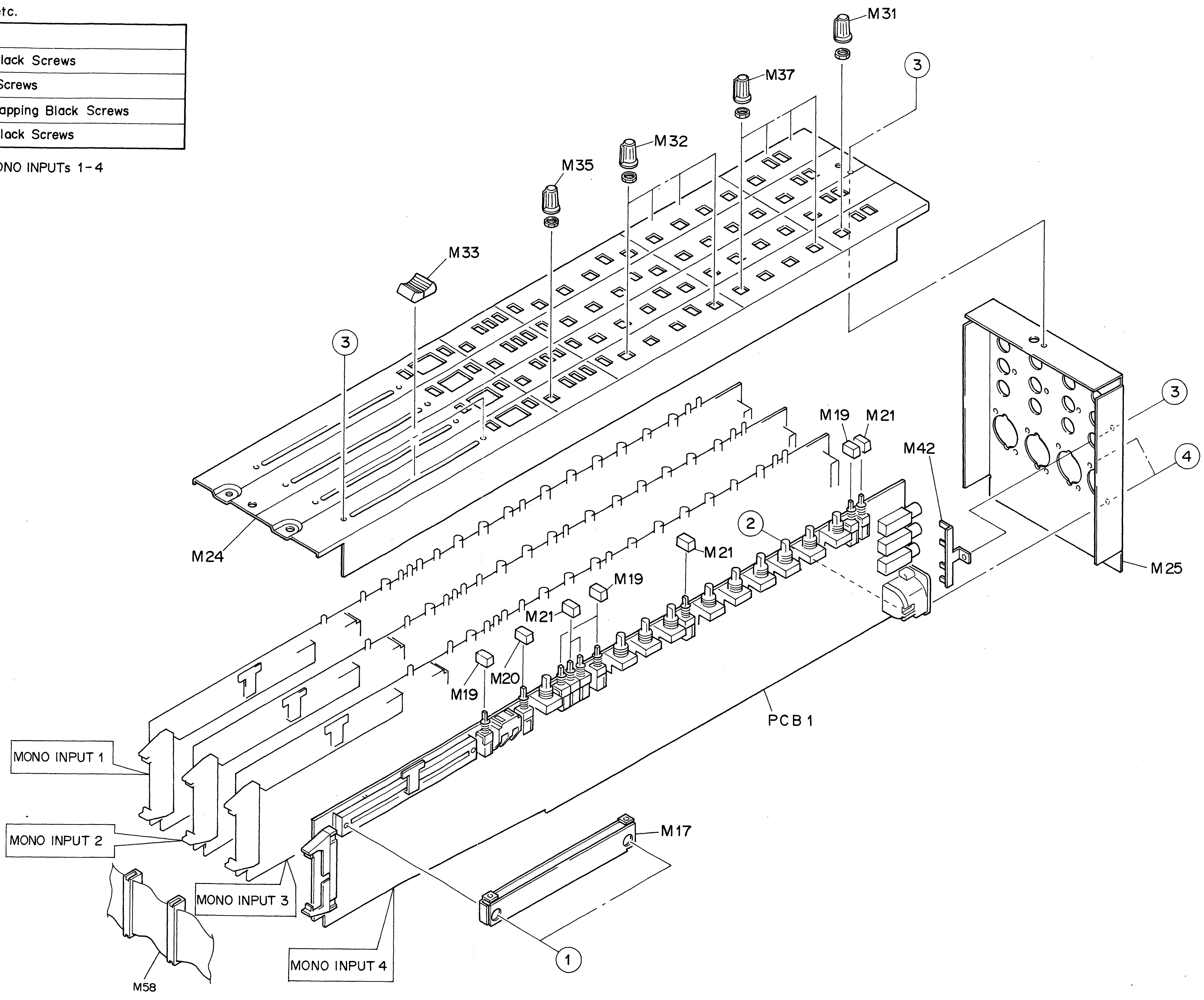

PACKAGING
M110
M103
M101
M101
WR-S4400 Series
M110
M110
M110
M104
M110

EXPLODED VIEW OF MONO INPUT

○ Number show screws, washers, nuts, etc.

NO	Screws	Description
①	XSB3+4FXK	Binding Head Black Screws
②	XTB3+6JFX	Binding Head Screws
③	XTB3+6FFXK	Binding Head Tapping Black Screws
④	XTB3+6JFXK	Binding Head Black Screws

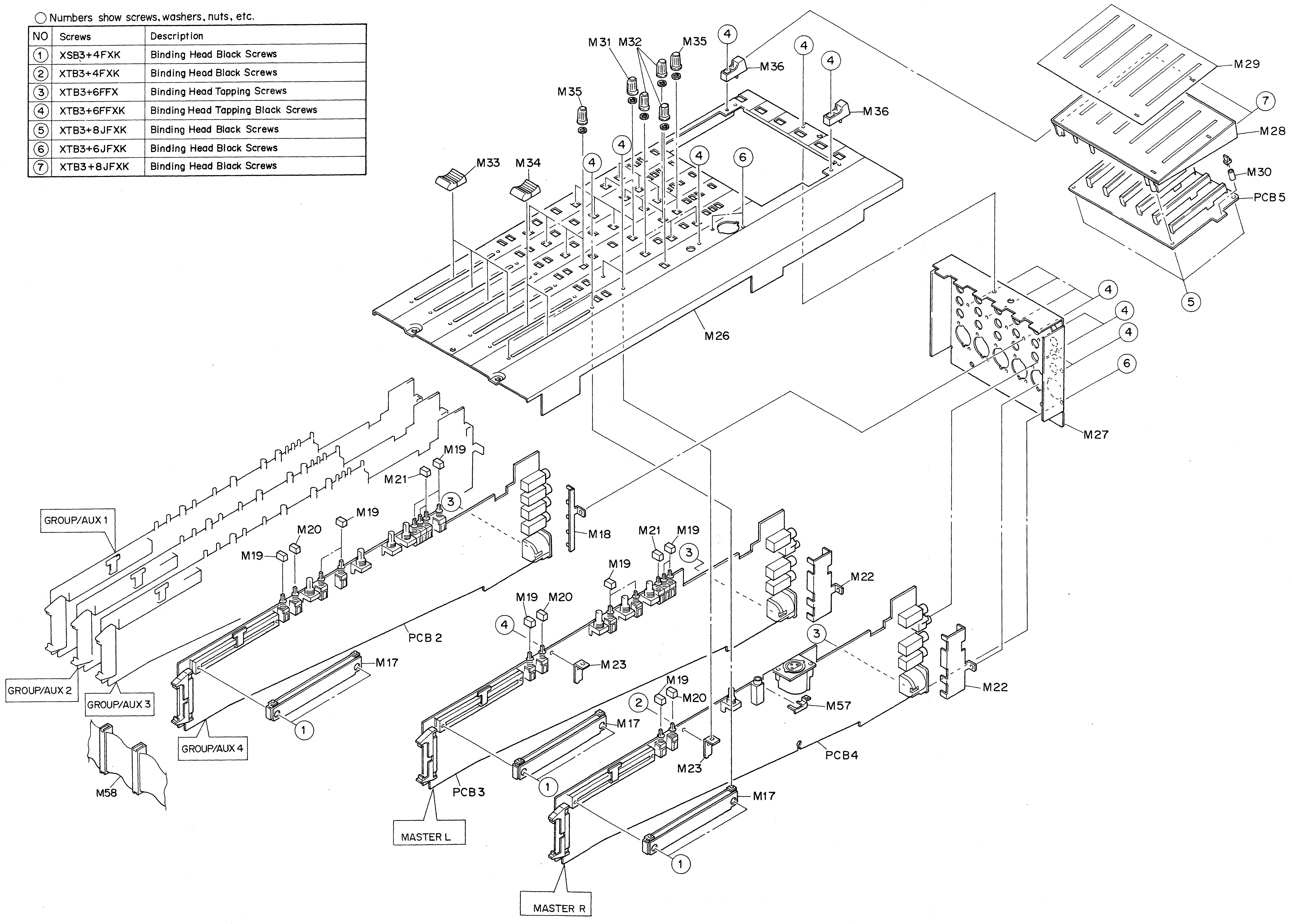
※ MONO INPUTs 5-24 as same as MONO INPUTs 1-4


M31
③
M37
M32
M35
M33
③
M19
M21
M42
③
④
M25
M24
②
M21
M19
M21
M20
M19
PCB 1
MONO INPUT 1
MONO INPUT 2
MONO INPUT 3
MONO INPUT 4
M17
M58
①

EXPLODED VIEW OF GROUP/AUX

○ Numbers show screws, washers, nuts, etc.

NO	Screws	Description
①	XSB3+4FXK	Binding Head Black Screws
②	XTB3+4FXK	Binding Head Black Screws
③	XTB3+6FFX	Binding Head Tapping Screws
④	XTB3+6FFXK	Binding Head Tapping Black Screws
⑤	XTB3+8JFXK	Binding Head Black Screws
⑥	XTB3+6JFXK	Binding Head Black Screws
⑦	XTB3+8JFXK	Binding Head Black Screws


M31
M32
M35
④
M36
M29
M35
⑦
M28
M30
PCB5
M33
M34
⑥
M26
⑤
M27
M19
M21
③
M18
GROUP/AUX 1
M20
M19
PCB 2
M21
M19
M22
M19
M20
M23
M17
GROUP/AUX 2
GROUP/AUX 3
①
GROUP/AUX 4
M58
M20
M57
②
M17
M23
PCB4
PCB3
MASTER L
M17
MASTER R

REPLACEMENT PARTS LIST

Important Notice

1. Components identified by "⚠" mark have special characteristics important for safety.
   When replacing any of these components, use only manufacturer's specified parts.
2. Printed circuit board assembly with mark (NLA) is no longer available after production discontinuation of the complete set.

MISCELLANEOUS

REF.NO.	PART NO.	DESCRIPTION
T101 ⚠	YWAPTA00100A4	Power Transformer
F101 ⚠	XBA2C05ET0A	Current Fuse 500mA 250V
E101 ⚠	YFVM030908A	AC Power Cord for WR-S4424/G, WR-S4416 /G and WR-S4412 /G
	YWAACA0010A4	AC Power Cord for WR-S4424/B, WR-S4416 /B and WR-S4412 /B
M1	YWA5DA0319A2	Ornament for WR-S4424
	YWA5DA0313A2	Ornament for WR-S4416
	YWA5DA0317A2	Ornament for WR-S4412
M2	YWA2NA0370A4	Spacer
M3	YWA5DA0315A3	Ornament
M4	YWA5DA0316A3	Ornament
M5	YWA5KA1168A3	Case
M6	YWA3BA0083A4	Supporting Angle
M7	YWA2XA0093A3	Protector
M8	YWA2KA0708A1	Chassis for WR-S4424
	YWA2KA0705A1	Chassis for WR-S4416
	YWA2KA0707A1	Chassis for WR-S4412
M9	YWA2FC0541A4	Cushion for WR-S4424
	YWA2FB0541A4	Cushion for WR-S4416
	YWA2FA0541A4	Cushion for WR-S4412
M10	YWDKN-5	Cord Clamp
M11	YW1492	Rubber Foot
M12	YWA5KA1167A3	Case
M13	YWA3BA0093A2	Supporting Angle for WR-S4424/B,G
	YWA3BA0082A2	Supporting Angle for WR-S4416/B,G
	YWA3BA0092A2	Supporting Angle for WR-S4412/B,G
M14	YWA2NA0371A4	Spacer
M15	YWA5DA0320A3	Ornament for WR-S4424
	YWA5DA0318A3	Ornament for WR-S4412
	YWA5DA0314A3	Ornament for WR-S4416
M16	YWA7PA0059A4	Badge
M17	YWA2SA1985A4	Mounting Angle
M19	YWA6JA0126A4	Button Black
M20	YWA6JA0127A3	Button Red
M21	YWA6JB0126A4	Button White
M24	YWA5WA1274A2	Upper Panel
M25	YWA5WA1275A3	Rear Panel
M26	YWA5WA1276A2	Upper Panel
M27	YWA5WA1277A3	Rear Panel
M28	YWA5KA1169A1	LED Case
M29	YWA1RA0024A4	LED Front Panel
M31	YWA5RA0336A3	VR Knob (Red)
M32	YWA5RA0362A3	VR Knob (White)
M33	YWA5RB0340A3	Fader Knob (Red) for GROUP / AUX
	YWA5RA0340A3	Fader Knob (White) for MONO INPUT Unit
M34	YWA5RC0340A3	Fader Knob (Blue) for GROUP / AUX Unit
M35	YWA5RE0336A3	VR Knob (Black)
M36	YWA2EA0171A4	Mounting Guide for LED
M37	YWA5RC0336A3	VR Knob (Blue)
M42	YWA3BA0084A4	Supporting Angle for MONO INPUT Unit
M46	YWA5WA1273A2	Panel
M47	YWSR6W1	Cord Clamp
M48	YWA7MA0149A4	Safety Label
M49	YWA7QA2723A4	Main Label for WR-S4424/G
	YWA7QB2723A4	Main Label for WR-S4416/G
	YWA7QC2723A4	Main Label for WR-S4412/G
	YWA7QA2723A4	Main Label for WR-S4424/B
	YWA7QB2723A4	Main Label for WR-S4416/B
	YWA7QC2723A4	Main Label for WR-S4412/B
M50	YWAE6UB10	Label
M51	YWA7SA0447A4	Label
M52	YWA5DA0020A3	Ornament
M53	YW2196	Card Holder
M54	YWBM90HR02B	Knob
M55	YWA7SA0689A4	Label
M58	YWRS4424LA0	Bus Cable Assy for WR-S4424
	YWRS4416LA0	Bus Cable Assy for WR-S4416
	YWRS4412LA0	Bus Cable Assy for WR-S4412

MONO INPUT BOARD

REF.NO.	PART NO.	DESCRIPTION
PCB1 (NLA)	YWRS4400P01	Printed Circuit Board Assy
IC1,2	YWNJM2068DD	IC
IC3	YWNJM4556DD	IC
Q1,2	2SC1844-FE	Transistor
Q3-5	2SC1684-QR	Transistor
Q6	2SA564-RS	Transistor
Q7	2SC1684-QR	Transistor
Q8	2SA564-RS	Transistor
Q9	2SK301-R	Transistor
Q10,11	2SC1318-RS	Transistor
D1,2	MA165	Diode
D3	LN021582PH	LED
D5	MA167	Diode
R2,3	ER0S2CKF6801	Metal 6.8K ohms 1/4W
R4,5	ER0S2CKF2202	Metal 22K ohms 1/4W
R6,7	ER0S2CKF3301	Metal 3.3K ohms 1/4W
R8	ER0S2CKF3601	Metal 3.6K ohms 1/4W
R9,10	ERDS2TJ100	Carbon 10 ohms 1/4W
R11,12	ERDS2TJ473	Carbon 47K ohms 1/4W
R13,14	ER0S2CKF1501	Metal 1.5K ohms 1/4W
R15	ER0S2CKF61R9	Metal 61.9 ohms 1/4W
R16,17	ER0S2CKF2490	Metal 249 ohms 1/4W
R18,19	ER0S2CKF1501	Metal 1.5K ohms 1/4W
R20	ERDS2TJ473	Carbon 47K ohms 1/4W
R21	ERDS2TJ333	Carbon 33K ohms 1/4W
R22	ER0S2CKF3011	Metal 3.01K ohms 1/4W
R23	ER0S2CKF1240	Metal 124 ohms 1/4W
R24,25	ERDS2TJ101	Carbon 100 ohms 1/4W
R26	ERDS2TJ623	Carbon 62K ohms 1/4W
R27	ERDS2TJ103	Carbon 10K ohms 1/4W
R28	ERDS2TJ333	Carbon 33K ohms 1/4W
R29	ERDS2TJ221	Carbon 220 ohms 1/4W
R30	ERDS2TJ333	Carbon 33K ohms 1/4W
R31	ERD50FJ182	Carbon 1.8K ohms 1/2W
R32	ERDS2TJ103	Carbon 10K ohms 1/4W
R33	ERDS2TJ183	Metal 18K ohms 1/4W
R34	ERDS2TJ472	Carbon 4.7K ohms 1/4W
R35	ERDS2TJ333	Carbon 33K ohms 1/4W
R36	ERDS2TJ221	Carbon 220 ohms 1/4W
R37	ERDS2TJ333	Carbon 33K ohms 1/4W
R38	ERD50FJ182	Carbon 1.8K ohms 1/2W
R39,40	ERDS2TJ103	Carbon 10K ohms 1/4W
R41	ERDS2TJ333	Carbon 33K ohms 1/4W
R42,43	ERDS2TJ562	Carbon 5.6K ohms 1/4W
R44,45	ERDS2TJ223	Carbon 22K ohms 1/4W
R46,47	ERDS2TJ332	Carbon 3.3K ohms 1/4W
R48	ERDS2TJ104	Carbon 100K ohms 1/4W
R49	ERDS2TJ103	Carbon 10K ohms 1/4W
R50	ERDS2TJ472	Carbon 4.7K ohms 1/4W
R51	ERDS2TJ473	Carbon 47K ohms 1/4W
R52-62	ERDS2TJ333	Carbon 33K ohms 1/4W
R63	ERDS2TJ101	Carbon 100 ohms 1/4W
R64-66	ERQ14AJ100	Fuse Resistor 10 ohms 1/4W
R67	ERDS2TJ101	Carbon 100 ohms 1/4W
R68	ERDS2TJ223	Carbon 22K ohms 1/4W
R70,71	ER0S2CKF4702	Metal 47K ohms 1/4W
R73	ERDS2TJ104	Carbon 100K ohms 1/4W
R74	ERDS2TJ562	Carbon 5.6K ohms 1/4W
R75	ERDS2TJ103	Carbon 10K ohms 1/4W
R76	ERDS2TJ101	Carbon 100 ohms 1/4W
R77	ERDS2TJ334	Carbon 330K ohms 1/4W
R78	ERDS2TJ152	Carbon 1.5K ohms 1/4W
R79	ER0S2CKF3601	Metal 3.6K ohms 1/4W
VR2	EVJCC0F01465	Variable Resistor 7.5K /11K ohms
VR3	EVJ01F01ACE	Variable Resistor 55K ohms
VR4	EVJC20F01C15	Variable Resistor 100K ohms
VR5,6	EVJ01F01ACE	Variable Resistor 55K ohms
VR7	EVJCC1F01651	Variable Resistor 10K ohms
VR8-11	EVJ01BF01A24	Variable Resistor 20K ohms
ATT1	EVAJQ1P21Y14	Attenuator 10K ohms
C1	ECEA1JU100	Electrolytic 10 µF 63V
C2,3	YWRA263T470	Electrolytic 47 µF
C4,5	ECEA1CU470	Electrolytic 47 µF 16V
C6,7	YWUP05B101KN	Ceramic 100 pF
C8,9	ECEA1CU220	Electrolytic 22 µF 16V
C10	ECEA0JU102	Electrolytic 1000 µF 6.3V
C11,12	YWUP05B101KN	Ceramic 100 pF
C13	ECEA1CU220	Electrolytic 22 µF 16V
C14	YWUP05S330JN	Ceramic 33 pF
C15	ECEA0JU471	Electrolytic 470 µF 6.3V
C16	ECEA1CU470	Electrolytic 47 µF 16V
C17	YWUP05B101KN	Ceramic 100 pF
C18	ECEA1CU220	Electrolytic 22 µF 16V
C19	ECEA1HS3R3	Electrolytic 3.3 µF 50V
C20	YWUP05S220JN	Ceramic 22 pF
C21	ECEA1HS3R3	Electrolytic 3.3 µF 50V
C22,23	ECQV1H473JZ	Plastic 0.047 µF 50V
C24	ECQB1H821JZ	Plastic 820 pF 50V
C25	YWUP05S330JN	Ceramic 33 pF
C26	YWUP05S220JN	Ceramic 22 pF
C27	ECQM1H123JZ	Plastic 0.012 µF 50V
C28	ECQB1H472JZ	Plastic 0.0047 µF 50V
C29	ECEA1CU470	Electrolytic 47 µF 16V
C30	ECEA1CU220	Electrolytic 22 µF 16V
C31	YWUP05S220JN	Ceramic 22 pF
C32	ECEA1CU470	Electrolytic 47 µF 16V
C33-35	ECKR1H472KB5	Ceramic 4700 pF
C36,37	YWR2025T221	Electrolytic 220 µF
C38,39	ECKR1H472KB5	Ceramic 4700 pF
C41	ECEA1JU100	Electrolytic 10 µF 63V

REF.NO.	PART NO.	DESCRIPTION	
C42	ECEA1CU470	Electrolytic	47 µF 16V
SW1-9	YWPUJ192GSNG	Push Switch	
CN1	YWRAMSA331	Connector	
CN2	YWXG4A3435	Connector	
JK1	YWYKB215010	Jack	
JK2	YWYKB215074	Jack	
JK3	YWYKB215010	Jack	

GROUP /AUX BOARD

REF.NO.	PART NO.	DESCRIPTION	
PCB2 (NLA)	YWRS4400P02	Printed Circuit Board Assy	
IC1,2	YWNJM2068DD	IC	
IC3	YWNJM4556DD	IC	
IC4,5	YWNJM2068DD	IC	
IC6	YWNJM4558DD	IC	
Q1,2	2SK301-R	Transistor	
R1	ERDS2TJ220	Carbon	22 ohms 1/4W
R2	ERDS2TJ333	Carbon	33K ohms 1/4W
R3	ERDS2TJ392	Carbon	3.9K ohms 1/4W
R4	ERDS2TJ623	Carbon	62K ohms 1/4W
R5,6	ERDS2TJ333	Carbon	33K ohms 1/4W
R7,8	ERDS2TJ101	Carbon	100 ohms 1/4W
R9	ERDS2TJ472	Carbon	4.7K ohms 1/4W
R10	ERDS2TJ103	Carbon	10K ohms 1/4W
R11	ERDS2TJ334	Carbon	330K ohms 1/4W
R12	ERDS2TJ104	Carbon	100K ohms 1/4W
R13	ERDS2TJ223	Carbon	22K ohms 1/4W
R14	ERDS2TJ912	Carbon	9.1K ohms 1/4W
R15,16	ERDS2TJ473	Carbon	47K ohms 1/4W
R17,18	ER0S2CKF1002	Metal	10K ohms 1/4W
R19	ER0S2CKF1912	Metal	19.1K ohms 1/4W
R20	ERDS2TJ750	Carbon	75 ohms 1/4W
R21	ER0S2CKF2102	Metal	21K ohms 1/4W
R22	ERDS2TJ103	Carbon	10K ohms 1/4W
R23,24	ER0S2CKF1002	Metal	10K ohms 1/4W
R25	ER0S2CKF2002	Metal	20K ohms 1/4W
R26	ERDS2TJ750	Carbon	75 ohms 1/4W
R27	ER0S2CKF2102	Metal	21K ohms 1/4W
R28	ERDS2TJ103	Carbon	10K ohms 1/4W
R29-31	ERDS2TJ333	Carbon	33K ohms 1/4W
R32	ERDS2TJ101	Carbon	100 ohms 1/4W
R33	ERDS2TJ220	Carbon	22 ohms 1/4W
R34-36	ERDS2TJ333	Carbon	33K ohms 1/4W
R37	ERDS2TJ473	Carbon	47K ohms 1/4W
R38,39	ERDS2TJ223	Carbon	22K ohms 1/4W

REF.NO.	PART NO.	DESCRIPTION	
R40	ERDS2TJ472	Carbon	4.7K ohms 1/4W
R41	ERDS2TJ103	Carbon	10K ohms 1/4W
R42	ERDS2TJ334	Carbon	330K ohms 1/4W
R43	ERDS2TJ104	Carbon	100K ohms 1/4W
R44	ERDS2TJ223	Carbon	22K ohms 1/4W
R45	ERDS2TJ203	Carbon	20K ohms 1/4W
R46	ERDS2TJ473	Carbon	47K ohms 1/4W
R47	ERDS2TJ330	Carbon	33 ohms 1/4W
R48,49	ERDS2TJ473	Carbon	47K ohms 1/4W
R50	ERDS2TJ333	Carbon	33K ohms 1/4W
R51	ERDS2TJ101	Carbon	100 ohms 1/4W
R52	ER0S2CKF4991	Metal	4.99K ohms 1/4W
R53	ER0S2CKF7871	Metal	7.87K ohms 1/4W
R54	ERDS2TJ473	Carbon	47K ohms 1/4W
R55	ER0S2CKF4991	Metal	4.99K ohms 1/4W
R56	ER0S2CKF7871	Metal	7.87K ohms 1/4W
R57	ERDS2TJ473	Carbon	47K ohms 1/4W
R58-63	ERDS2TJ333	Carbon	33K ohms 1/4W
R64-69	ERQ14AJ100	Fuse Resistor	10A
VR2	EVJCC1F011K1	Variable Resistor	20K ohms-C
VR3	EVJ01BF01A24	Variable Resistor	20K ohms-A
VR4	EVJC20F01A24	Variable Resistor	20K ohms-A
VR5	EVJC51F01679	Variable Resistor	10K ohms BH
ATT1	EVAJQ1P21Y14	Attenuator	10K ohms
C1	ECEA0JU471	Electrolytic	470 µF 6.3V
C2	YWUP05B101KN	Ceramic	100 pF
C3,4	YWUP05S220JN	Ceramic	22 pF
C5	ECEA1CU470	Electrolytic	47 µF 16V
C6	YWUP05B101KN	Ceramic	100 pF
C7	ECEA1CU220	Electrolytic	22 µF 16V
C8	YWUP05S220JN	Ceramic	22 pF
C9,10	ECEA1CU220	Electrolytic	22 µF 16V
C11	YWUP05S220JN	Ceramic	22 pF
C12	ECEA1CU221	Electrolytic	220 µF 16V
C13	YWUP05S220JN	Ceramic	22 pF
C14	ECEA1CU221	Electrolytic	220 µF 16V
C15	ECEA1CU220	Electrolytic	22 µF 16V
C16	ECEA0JU471	Electrolytic	470 µF 6.3V
C17,18	YWUP05S220JN	Ceramic	22 pF
C19	ECEA1CU470	Electrolytic	47µF 16V
C20	ECEA1CU220	Electrolytic	22 µF 16V
C21	YWUP05S220JN	Ceramic	22 pF
C22	ECEA1CU220	Electrolytic	22 µF 16V
C23	YWUP05S220JN	Ceramic	22 pF
C24	ECEA1CU101	Electrolytic	100 µF 16V
C25,26	ECEA1CU220	Electrolytic	22 µF 16V
C27	YWUP05B101KN	Ceramic	100 pF
C28	ECEA1CU220	Electrolytic	22 µF 16V
C29	ECEA1CU470	Electrolytic	47 µF 16V
C30	YWUP05B101KN	Ceramic	100 pF
C31	ECEA1CU220	Electrolytic	22 µF 16V
C32	ECEA1CU470	Electrolytic	47 µF 16V
C33	ECKF1H472ZF	Ceramic	4700 PF
C34	ECEA1EU101	Electrolytic	100 µF 25V (SU)
C35	ECKF1H472ZF	Ceramic	4700 PF

REF.NO.	PART NO.	DESCRIPTION	
C36	ECEA1EU101	Electrolytic	100 µF 25V (SU)
C37	ECKF1H472ZF	Ceramic	4700 pF
C38	ECEA1ES221	Electrolytic	220 µF 25V(SU)
C39	ECKF1H472ZF	Ceramic	4700 pF
C40	ECEA1ES221	Electrolytic	220 µF 25V(SU)
C41	ECKF1H472ZF	Ceramic	4700 pF
C42	ECEA1ES221	Electrolytic	220 µF 25V(SU)
C43	ECKF1H472ZF	Ceramic	4700 pF
C44	ECEA1ES221	Electrolytic	220 µF 25V(SU)
C45	ECKF1H472ZF	Ceramic	4700 pF
C46	ECEA1EU101	Electrolytic	100 µF 25V (SU)
C47	ECKF1H472ZF	Ceramic	4700 pF
C48	ECEA1EU101	Electrolytic	100 µF 25V (SU)
C49	ECKF1H472ZF	Ceramic	4700 pF
SW1-8	YWPUJ192GSNG	Push Switch	
CN1	YWRAMSA332NL	Connector	
CN2	YWXG4A3435	Connector	
CN3	YWS3BXHA	3-pin Connector	
JK1	YWYKB215074	Jack	
JK2-4	YWYKB215010	Jack	
M17	YWA2SA1985A4	Mounting Angle for Fader	
M18	YWA3BA0090A4	Supporting Angle for Jack	

MASTER L BOARD

PCB3 (NLA)	YWRS4400P03	Printed Circuit Board Assy	
IC1,2	YWNJM2068DD	IC	
IC3	YWNJM4556DD	IC	
IC4	YWNJM2068DD	IC	
IC5	YWUPD6360C	IC	
IC6	YWNJM4558DD	IC	
IC7	YWNJM2068DD	IC	
Q1,2	2SK301-R	Transistor	
Q3,4	2SC1684-QR	Transistor	
R1	ERDS2TJ220	Carbon	22 ohms 1/4W
R2	ERDS2TJ623	Carbon	62K ohms 1/4W
R3	ERDS2TJ392	Carbon	3.9K ohms 1/4W
R4-6	ERDS2TJ333	Carbon	33K ohms 1/4W
R7,8	ERDS2TJ101	Carbon	100 ohms 1/4W
R9,10	ERDS2TJ103	Carbon	10K ohms 1/4W
R11	ERDS2TJ912	Carbon	9.1K ohms 1/4W
R12	ERDS2TJ472	Carbon	4.7K ohms 1/4W
R13	ERDS2TJ334	Carbon	330K ohms 1/4W
R14	ERDS2TJ104	Carbon	100K ohms 1/4W
R15	ERDS2TJ223	Carbon	22K ohms 1/4W
R16,17	ERDS2TJ473	Carbon	47K ohms 1/4W
R18-21	ER0S2CKF1002	Metal	10K ohms 1/4W
R22	ER0S2CKF1912	Metal	19.1K ohms 1/4W
R23	ER0S2CKF2002	Metal	20K ohms 1/4W
R24	ERDS2TJ750	Carbon	75 ohms 1/4W

REF.NO.	PART NO.	DESCRIPTION	
R25	ER0S2CKF2102	Metal	21K ohms 1/4W
R26	ERDS2TJ750	Carbon	75 ohms 1/4W
R27	ER0S2CKF2102	Metal	21K ohms 1/4W
R28,29	ERDS2TJ103	Carbon	10K ohms 1/4W
R30	ERDS2TJ332	Carbon	3.3K ohms 1/4W
R31	ERDS2TJ272	Carbon	2.7K ohms 1/4W
R33	ERDS2TJ333	Carbon	33K ohms 1/4W
R34	ERDS2TJ101	Carbon	100 ohms 1/4W
R35	ERDS2TJ104	Carbon	100K ohms 1/4W
R36	ERDS2TJ102	Carbon	1K ohms 1/4W
R37	ERDS2TJ220	Carbon	22 ohms 1/4W
R38	ERDS2TJ473	Carbon	47K ohms 1/4W
R39,40	ERDS2TJ333	Carbon	33K ohms 1/4W
R41	ERDS2TJ473	Carbon	47K ohms 1/4W
R42-44	ERDS2TJ333	Carbon	33K ohms 1/4W
R45	ERDS2TJ473	Carbon	47K ohms 1/4W
R46	ERDS2TJ334	Carbon	330K ohms 1/4W
R47	ERDS2TJ472	Carbon	4.7K ohms 1/4W
R48	ERDS2TJ104	Carbon	100K ohms 1/4W
R49	ERDS2TJ223	Carbon	22K ohms 1/4W
R50	ERDS2TJ203	Carbon	20K ohms 1/4W
R51	ERDS2TJ101	Carbon	100 ohms 1/4W
R52	ERDS2TJ473	Carbon	47K ohms 1/4W
R53-57	ERDS2TJ223	Carbon	22K ohms 1/4W
R58	ERDS2TJ473	Carbon	47K ohms 1/4W
R59	ERDS2TJ103	Carbon	10K ohms 1/4W
R60	ERDS2TJ391	Carbon	390 ohms 1/4W
R61	ERDS2TJ333	Carbon	33K ohms 1/4W
R62	ERDS2TJ473	Carbon	47K ohms 1/4W
R63	ERDS2TJ103	Carbon	10K ohms 1/4W
R64	ERDS2TJ223	Carbon	22K ohms 1/4W
R65	ERDS2TJ473	Carbon	47K ohms 1/4W
R66-75	ERDS2TJ333	Carbon	33K ohms 1/4W
R76	ERDS2TJ273	Carbon	27K ohms 1/4W
R77	ERDS2TJ223	Carbon	22K ohms 1/4W
R78-81	ERQ14AJ100	Fuse Resistor	10A
VR2	EVJ01BF01A24	Variable Resistor	20KA ohms
VR3	EVJC20F01A24	Variable Resistor	20KA ohms
VR4	EVJCC0F01463	Variable Resistor	20K/20K ohms
ATT1	EVAJQ1P21Y14	Attenuator	10K ohms
C1	ECEA0JU471	Electrolytic	470 µF 6.3V
C2	YWUP05B101KN	Ceramic	100 pF
C3,4	YWUP05S220JN	Ceramic	22 pF
C5	ECKF1H472ZF	Ceramic	4700 pF
C6	ECEA1CU470	Electrolytic	47 µF 16V
C7	YWUP05B101KN	Ceramic	100 pF
C8	ECEA1CU220	Electrolytic	22 µF 16V
C9	YWUP05S220JN	Ceramic	22 pF
C10,12	ECEA1CU220	Electrolytic	22 µF 16V
C13	ECKF1H472ZF	Ceramic	4700 pF
C14,15	YWUP05S220JN	Ceramic	22 pF
C16,17	ECEA1CU221	Electrolytic	220 µF 16V
C18	ECEA0JU471	Electrolytic	470 µF 6.3V
C19	ECKF1H222KB	Ceramic	2200 pF 50V
C20	YWUP05S220JN	Ceramic	22 pF

REF.NO.	PART NO.	DESCRIPTION	
C21	ECKF1H222KB	Ceramic	2200 pF 50V
C22,23	ECEA1CU220	Electrolytic	22 µF 16V
C24	ECKF1H222KB	Ceramic	2200 pF 50V
C25	YWUP05S220JN	Ceramic	22 pF
C26	ECEA1CU470	Electrolytic	47 µF 16V
C27	ECEA1CU220	Electrolytic	22 µF 16V
C28	YWUP05S220JN	Ceramic	22 pF
C29	ECEA1CU470	Electrolytic	47 µF 16V
C30	ECEA1CU220	Electrolytic	22 µF 16V
C31,32	YWUP05S220JN	Ceramic	22 pF
C33	ECEA1CU220	Electrolytic	22 µF 16V
C34	YWRA263V330	Electrolytic	33 µF
C35	ECEA1EU101	Electrolytic	100 µF 25V (SU)
C36	YWUP05S220JN	Ceramic	22 pF
C37,38	ECEA1CU220	Electrolytic	22 µF 16V
C39	YWUP05S220JN	Ceramic	22 pF
C40	ECEA1CU470	Electrolytic	47 µF 16V
C41	ECKF1H472ZF	Ceramic	4700 pF
C42,43	ECEA1EU101	Electrolytic	100 µF 25V (SU)
C44,45	ECKF1H472ZF	Ceramic	4700 pF
C46,47	ECEA1ES221	Electrolytic	220 µF 25V(SU)
C48,49	ECKF1H472ZF	Ceramic	4700 pF
C50,51	ECEA1ES221	Electrolytic	220 µF 25V(SU)
C52,53	ECKF1H472ZF	Ceramic	4700 pF
C54,55	ECEA1ES221	Electrolytic	220 µF 25V(SU)
C56	ECEA1CU220	Electrolytic	22 µF 16V
SW1-7	YWPUJ192GSNG	Push Switch	
CN1	YWRAMSA332NL	Connector	
CN2	YWXG4A3435	Connector	
CN3	YWS3BXHA	3-pin Connector	
JK1	YWYKB215010	Jack	
JK2	YWYKB215074	Jack	
JK3	YWYKB215010	Jack	
JK4	YKC213048	Jack	
M17	YWA2SA1985A4	Mounting Angle	
M22	YWA3BA0085A4	Supporting Angle	
M23	YWA3BA0086A4	Supporting Angle	

REF.NO.	PART NO.	DESCRIPTION	
MASTER R BOARD			
PCB4 (NLA)	YWRS4400P04	Printed Circuit Board Assy	
IC1,2	YWNJM2068DD	IC	
IC3	YWNJM4556DD	IC	
IC4	YWM5201P	IC	
IC5	YWNJM4556DD	IC	
Q1,2	2SK301-R	Transistor	
Q3,4	2SC1684-QR	Transistor	
R1	ERDS2TJ220	Carbon	22 ohms 1/4W
R2	ERDS2TJ623	Carbon	62K ohms 1/4W
R3	ERDS2TJ392	Carbon	3.9K ohms 1/4W
R4-6	ERDS2TJ333	Carbon	33K ohms 1/4W
R7,8	ERDS2TJ101	Carbon	100 ohms 1/4W
R9,10	ERDS2TJ103	Carbon	10K ohms 1/4W
R11	ERDS2TJ912	Carbon	9.1K ohms 1/4W
R12	ERDS2TJ472	Carbon	4.7K ohms 1/4W
R13	ERDS2TJ334	Carbon	330K ohms 1/4W
R14	ERDS2TJ104	Carbon	100K ohms 1/4W
R15	ERDS2TJ223	Carbon	22K ohms 1/4W
R16,18	ERDS2TJ473	Carbon	47K ohms 1/4W
R19-22	ER0S2CKF1002	Metal	10K ohms 1/4W
R23	ER0S2CKF1912	Metal	
R24	ER0S2CKF2002	Metal	20K ohms 1/4W
R25	ERDS2TJ750	Carbon	75 ohms 1/4W
R26	ER0S2CKF2102	Metal	21K ohms 1/4W
R27	ERDS2TJ750	Carbon	75 ohms 1/4W
R28	ER0S2CKF2102	Metal	21K ohms 1/4W
R29,30	ERDS2TJ103	Carbon	10K ohms 1/4W
R31	ERDS2TJ332	Carbon	3.3K ohms 1/4W
R32	ERDS2TJ272	Carbon	2.7K ohms 1/4W
R33	ERDS2TJ333	Carbon	33K ohms 1/4W
R34	ERDS2TJ101	Carbon	100 ohms 1/4W
R35	ERQ12AJ2R2P	Fuse Resistor	2.2 ohms
R36	ERDS2TJ104	Carbon	100K ohms 1/4W
R37	ERDS2TJ102	Carbon	1K ohms 1/4W
R38	ERD25FJ272	Carbon	2.7K ohms 1/4W
R39	ERDS2TJ473	Carbon	47K ohms 1/4W
R40	ERDS2TJ102	Carbon	1K ohms 1/4W
R41-43	ERDS2TJ473	Carbon	47K ohms 1/4W
R44	ERDS2TJ334	Carbon	330K ohms 1/4W
R45	ERDS2TJ472	Carbon	4.7K ohms 1/4W
R46	ERDS2TJ104	Carbon	100K ohms 1/4W
R47	ERDS2TJ203	Carbon	20K ohms 1/4W
R48	ERDS2TJ223	Carbon	22K ohms 1/4W
R49	ERDS2TJ473	Carbon	47K ohms 1/4W
R50	ERDS2TJ101	Carbon	100 ohms 1/4W
R51	ERDS2TJ473	Carbon	47K ohms 1/4W
R52	ERDS2TJ392	Carbon	3.9K ohms 1/4W
R53	ERDS2TJ473	Carbon	47K ohms 1/4W
R54	ERDS2TJ392	Carbon	3.9K ohms 1/4W
R55,56	ERDS2TJ223	Carbon	22K ohms 1/4W

REF.NO.	PART NO.	DESCRIPTION
R57,58	ERDS2TJ103	Carbon 10K ohms 1/4W
R59,60	ERDS2TJ750	Carbon 75 ohms 1/4W
R61	ERDS2TJ220	Carbon 22 ohms 1/4W
R64-67	ERQ14AJ100	Fuse Resistor 10 ohms
VR2	EVJC20F01A24	Variable Resistor 20K ohms
ATT1	EVAJQ1P21Y14	Attenuator 10K ohms
C1	ECEA0JU471	Electrolytic 470 F 6.3V
C2	YWUP05B101KN	Ceramic 100 pF
C3,4	YWUP05S220JN	Ceramic 22 pF
C5	ECEA1CU470	Electrolytic 47 µF 16V
C6	YWUP05B101KN	Ceramic 100 pF
C7	ECEA1CU220	Electrolytic 22 µF 16V
C8	YWUP05S220JN	Ceramic 22 pF
C9,11	ECEA1CU220	Electrolytic 22 µF 16V
C12,13	YWUP05S220JN	Ceramic 22 pF
C14,15	ECEA1CU221	Electrolytic 220 µF 16V
C16-20	ECEA1CU220	Electrolytic 22 µF 16V
C21	YWUP05S220JN	Ceramic 22 pF
C22	ECEA1CU470	Electrolytic 47 µF 16V
C23,24	ECEA1CU220	Electrolytic 22 µF 16V
C25,26	YWUP05S220JN	Ceramic 22 pF
C27,28	ECEA1CU221	Electrolytic 220 µF 16V
C29	YWUP05B101KN	Ceramic 100 pF
C32,33	ECEA1EU101	Electrolytic 100 µF 25V (SU)
C34,35	-ECKR1H472KB5	Ceramic 4700 pF
C36,37	ECEA1ES221	Electrolytic 220 µF 25V(SU)
C38,39	ECEA1EU470	Electrolytic 47 µF 25V (SU)
C40,41	ECKF1H472ZF	Ceramic 4700 pF
C42,43	ECEA1ES221	Electrolytic 220 µF 25V(SU)
C44-46	ECKF1H472ZF	Ceramic 4700 pF
SW1,2	YWPUJ192GSNG	Push Switch
CN1	YWRAMSA332NL	Connector
CN2	YWXG4A3435	Connector
CN3	YWS5BXHA	5-pin Connector
CN4	YWB7BXHA	7-pin Connector
CN5	YWRAMSA331	Connector
CN6	YWB3BXHA	3-pin Connector
JK1	YWYKB215010	Jack
JK2	YWYKB215074	Jack
JK3	YWYKB215010	Jack
JK4	YKC213048	Jack
JK5	YWYKB215010	Jack
M17	YWA2SA1985A4	Mounting Angle
M22	YWA3BA0085A4	Supporting Angle
M23	YWA3BA0086A4	Supporting Angle
M57	YWA3BA0087A4	Supporting Angle

LED METER BOARD

REF.NO.	PART NO.	DESCRIPTION
PCB5 (NLA)	YWRS4400P05	Printed Circuit Board Assy
IC1-6	AN6891	IC
D1-6	LN121185P	LED
D7,8	LN220RP	LED
R1-6	ERDS2TJ223	Carbon 22K ohms 1/4W
R7	ERDS2TJ224	Carbon 220K ohms 1/4W
R8	ERDS2TJ682	Carbon 6.8K ohms 1/4W
R9	ERDS2TJ221	Carbon 220 ohms 1/4W
R10	ERDS2TJ224	Carbon 220K ohms 1/4W
R11	ERDS2TJ682	Carbon 6.8K ohms 1/4W
R12	ERDS2TJ221	Carbon 220 ohms 1/4W
R13	ERDS2TJ224	Carbon 220K ohms 1/4W
R14	ERDS2TJ682	Carbon 6.8K ohms 1/4W
R15	ERDS2TJ221	Carbon 220 ohms 1/4W
R16	ERDS2TJ224	Carbon 220K ohms 1/4W
R17	ERDS2TJ682	Carbon 6.8K ohms 1/4W
R18	ERDS2TJ221	Carbon 220 ohms 1/4W
R19	ERDS2TJ224	Carbon 220K ohms 1/4W
R20	ERDS2TJ682	Carbon 6.8K ohms 1/4W
R21	ERDS2TJ221	Carbon 220 ohms 1/4W
R22	ERDS2TJ224	Carbon 220K ohms 1/4W
R23	ERDS2TJ682	Carbon 6.8K ohms 1/4W
R24	ERDS2TJ221	Carbon 220 ohms 1/4W
R25	ERD50FJ182	Carbon 1.8K ohms 1/2W
VR1-6	EVND2AA03B53	Variable Resistor 5K ohms
C1	ECEA1HU2R2	Electrolytic 2.2 µF 50V
C2	ECQV1H104JZ	Plastic 0.1 µF 50V
C3	ECEA1HU2R2	Electrolytic 2.2 µF 50V
C4	ECEA1CSS221	Electrolytic 220 µF 16V
C5	ECEA1HU2R2	Electrolytic 2.2 µF 50V
C6	ECQV1H104JZ	Plastic 0.1 µF 50V
C7	ECEA1HU2R2	Electrolytic 2.2 µF 50V
C8	ECEA1CSS221	Electrolytic 220 µF 16V
C9	ECEA1HU2R2	Electrolytic 2.2 µF 50V
C10	ECQV1H104JZ	Plastic 0.1 µF 50V
C11	ECEA1HU2R2	Electrolytic 2.2 µF 50V
C12	ECEA1CSS221	Electrolytic 220 µF 16V
CN1	YWS8BEH	8-pin Connector
CN2	YWS7BEH	7-pin Connector
M30	YWA2NB0257A4	LED Spacer

POWER SWITCH BOARD

REF.NO.	PART NO.	DESCRIPTION	
PCB6	YWRS4400PA0	Printed Board	
C1,2 ⚠	ECKDRS222ME	Ceramic	2200 pF
SW1 ⚠	ESB70927V	Push Switch	
CN1	YWB3P5VH	3-pin Connector	
E1	YW851040	Insulator Cover	
E2	YWF105	Fuse Holder	
E3	YWA2QA0054A4	Electrode	

POWER SUPPLY BOARD

REF.NO.	PART NO.	DESCRIPTION	
PCB7 (NLA)	YWRS4400PA2	Printed Circuit Board Assy	
IC1	YWNJM7812FA	IC	
IC2	YWTA7317P	IC	
Q1	2SB943-PQ	Transistor	
Q2	2SD1268-PQ	Transistor	
Q3	2SC1684-QR	Transistor	
Q4	2SA564-RS	Transistor	
Q6	2SD1276A-QR	Transistor	
Q7	2SC1684-QR	Transistor	
Q8	2SA564-RS	Transistor	
D1	YWRB402F	Rectifier	
D2,3	MA165	Diode	
D4-7	YWAM01Z	Diode	
D8,9	YWHZS27EB2	Diode	
D10	YWRB152F	Diode	
D11	MA167	Diode	
D12	MA165	Diode	
D13,14	YWHZS16EB2	Diode	
R3,4	ERQ12HUKR39P	Fuse Resistor	0.39 ohms
R5,6	ERDS2TJ152	Carbon	1.5K ohms 1/4W
R11	ERQ12AJ4R7P	Fuse Resistor	4.7 ohms
R12	ERDS2TJ472	Carbon	4.7K ohms 1/4W
R13	ERDS2TJ103	Carbon	10K ohms 1/4W
R15	ERQ12AJ2R2P	Fuse Resistor	2.2 ohms
R16	ERDS2TJ153	Carbon	15K ohms 1/4W
R17	ERDS2TJ104	Carbon	100K ohms 1/4W
R18	ERDS2TJ473	Carbon	47K ohms 1/4W
R19	ERDS2TJ224	Carbon	220K ohms 1/4W
R20	ERDS2TJ682	Carbon	6.8K ohms 1/4W
R22	ERDS2TJ473	Carbon	47K ohms 1/4W
R23	ERDS2TJ104	Carbon	100K ohms 1/4W
R24	ERDS2TJ473	Carbon	47K ohms 1/4W
R25	ERDS2TJ103	Carbon	10K ohms 1/4W
R27	ERDS2TJ392	Carbon	3.9K ohms 1/4W
R28,29	ERDS2TJ681	Carbon	680 ohms 1/4W
R30,31	ERDS2TJ103	Carbon	10K ohms 1/4W
R35	ERDS2TJ104	Carbon	100K ohms 1/4W
C3	ECQM1104KZ	Plastic	0.1 µF 100V
C4,5	ECEB1VU682	Electrolytic	6800 µF 35V
C6,7	ECQB1H103JZ	Plastic	0.01 µF 50V
C8,9	YWR2025V331	Electrolytic	330 µF 25V
C10,11	ECQB1H103JZ	Plastic	0.01 µF 50V
C12	ECQM2104KZ	Plastic	0.1 µF
C13	ECES1KV102S	Electrolytic	1000 µF
C14	ECQM1103KZ	Plastic	0.01 µF 100V
C15	ECEA1JU330	Electrolytic	33 µF 1.6V
C16	ECEA1JU331	Electrolytic	330 µF 1.6V
C17	ECQM1103KZ	Plastic	0.01 µF 100V
C18	ECQV1H104JZ	Plastic	0.1 µF 50V
C19	ECEB1EU472	Electrolytic	4700 µF 25V
C20	ECQB1H103JZ	Plastic	0.01 µF 50V
C21	ECEA1CU221	Electrolytic	220 µF 16V
C22	ECQB1H103JZ	Plastic	0.01 µF 50V
C23	ECEA1VU100	Electrolytic	10 µF 35V
C24	ECEA1CU220	Electrolytic	22 µF 16V
C26	ECEA1HS3R3	Electrolytic	3.3 µF 50V
C27,28	YWRA225V471	Electrolytic	470 µF 25V
CN2	YWB7PSVH	7-pin Connector	
CN3	YWXG4A3435	Connector	
M44	YWA2KA0706A4	Chassis	
M45	YWA7DA0303A4	Heat Sink	
M56	YWAC-256	Insulator	

ACCESSORY PARTS/PACKAGING PARTS

REF.NO.	PART NO.	DESCRIPTION
M101	YWA8QA2680AN	Operating Instructions
M102	YWA8EA0154A4	Polyethylene Bag for WR-S4412
	YWA8EB0154A4	Polyethylene Bag for WR-S4416
	YWA8EC0154A4	Polyethylene Bag for WR-S4424
M103	YWT20X35C03	Polyethylene Bag
M104	XZB26X40C05	Polyethylene Bag
M110	YWA9CA1753AN	Packaging Assy for WR-S4412
	YWA9CA1754AN	Packaging Assy for WR-S4416
	YWA9CA1755AN	Packaging Assy for WR-S4424